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CONTRIBUTIONS FROM THE GRAY HERBARIUM OF
HARVARD UNIVERSITY.

NEW SERIES. — No. XXXI.

I. *DESCRIPTIONS OF SPERMATOPHYTES FROM THE
SOUTHWESTERN UNITED STATES, MEXICO,
AND CENTRAL AMERICA.*

By J. M. GREENMAN.

II. *DIAGNOSES AND NOTES RELATING TO AMERICAN
EUPATORIEAE.*

By B. L. ROBINSON.



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I. DESCRIPTIONS OF SPERMATOPHYTES FROM THE
SOUTHWESTERN UNITED STATES, MEXICO,
AND CENTRAL AMERICA.

By J. M. GREENMAN.

TRADESCANTIA FLUMINENSIS, Vell. Fl. Flum. 140, t. 152 (1790); C. G. Clarke in DC. Monogr. iii. 294. Specimens of this white-flowered South American species were secured by Señor Professor A. Dugès in the vicinity of Guanajuato, Mexico, 1904, no. 3 (hb. Gr.). According to Professor Dugès the plant is not cultivated there, but is found growing wild in moist shady places about the city of Guanajuato, although it is rare. The species does not seem to have been recorded hitherto from Mexico.

Hymenocallis riparia, n. sp. Leaves lorate, 2 to 6 dm. long, 7 to 14 mm. broad, entire, bordered with a narrow whitish subcartilaginous margin, glabrous, their bases expanded, persistent and forming a membranous collar 10 to 12 cm. in length; peduncle 3 to 3.5 dm. long, flattened; spathe-valves 2, lance-attenuate, 3.5 to 6 cm. long, thin and scarious; flowers 3 to 7, sessile; perianth white; tube of the perianth 8 to 12 cm. in length; divisions of the perianth nearly or quite equalling the length of the tube, 3 to 5 mm. in breadth, 5-7-nerved; staminal cup broad-funnelform, 2 to 2.5 cm. high, subentire; free portion of the filaments 5 to 6 cm. long, slightly broadened at the base, gradually tapering to the 1.5 cm. long verticillate anther, greenish; style much elongated, greenish; stigma overtopping the anthers; ovary sessile, bearing 3 to 7 ovules in each cell, these ascending from the lower inner angle of the cell and sometimes subsuperposed. — MEXICO. State of Morelos: by streams near Cuernavaca, 11 November, 1895, *C. G. Pringle*, no. 5979 (hb. Gr.), and in the same locality, 27 July, 1896 *C. G. Pringle*, no. 7204 (hb. Gr.); rocky river banks, barranca of Cuernavaca, altitude

1735 m., 22 July, 1904, *C. G. Pringle*, no. 8952 (hb. Gr.). The species is well characterized by its long narrow leaves, white flowers with narrow perianth-divisions, greenish filaments and style. It is apparently most nearly related to *H. adnata*, Herb.

Myrica Pringlei, n. sp. Shrub, 3 to 10 dm. high: stem and branches covered with a reddish or gray bark and dotted with numerous lenticels; ultimate branchlets at first pubescent, later glabrate: leaves petiolate, oblanceolate to oblong, 1.5 to 5 cm. long, 0.5 to 2 cm. broad, obtuse to rounded at the apex and submucronate, sparingly dentate towards the apex, entire in the lower half and abruptly to gradually narrowed into the 1-4 mm. long petiole, dark green above, paler beneath, sparingly pubescent and densely resinous-dotted on both surfaces in the early stages, later glabrate, becoming thick and firm in texture and somewhat verrucose above; midrib and the subhorizontally spreading lateral nerves rather prominent on the under surface: pistillate catkins solitary in the leaf-axils, slender, 5 to 12 mm. in length: flowers scattered, 1 in the axil of each bract; bractlets or scales at the base of the ovary 4, ciliate; ovary densely covered, except at the very top, with wax globules; styles somewhat flattened: staminate catkins solitary in the leaf-axils, 1 to 2 cm. in length; rachis sparingly pubescent, resinous-dotted: flowers scattered; stamens 4 to 12; anthers often roseate to purplish: mature fruit not seen.—**MEXICO.** State of Puebla: pine forests about Honey Station, altitude 1765 m., 25 April, 1904, *C. G. Pringle*, no. 10,002 (hb. Gr.).

The species here described is quite distinct from anything in the genus hitherto recorded from Mexico, and of the northern representatives it approaches most nearly *M. carolinensis*, Mill., from which, however, it differs in the longer and looser-flowered staminate and pistillate catkins, and in the somewhat smaller more glabrate leaves, which in age become distinctly verrucose on the upper surface.

Lozanella, n. gen. of *Urticaceae* (*Celtideae*). Flowers dioecious. Pistillate flowers in axillary cymes: perianth 5-6-parted; segments slightly imbricated. Ovary sessile; style divided to the base, branches stigmatose; ovules pendulent, solitary. Drupe small, ovoid, compressed; exocarp succulent; endocarp hard, bony. Embryo curved; cotyledons oblong-rotund. Staminate flowers unknown. Ligneous plants with opposite leaves, axillary cymose flowers, and small greenish drupaceous fruit.

L. trematoides, n. sp. Stem terete or slightly compressed at the nodes, and as well as the branches covered with a reddish-brown bark,

dotted with numerous whitish lenticels, at first pubescent later glabrate: leaves opposite, petiolate, ovate-acuminate, 5 to 9 cm. long, 3 to 4.5 cm. broad, evenly serrate-dentate, slightly rugulose and hirsute-hispid above, conspicuously reticulate-veined, hirsute and paler beneath; petioles 1 to 3 cm. long, pubescent; stipules lance-linear, about 4 mm. long, caducous: cymes of pistillate flowers rather slender, 1 to 2.5 cm. in length, 1.5 cm. or less in breadth, pubescent: flowers sessile: perianth 5-6-parted, 1.5 to 2 mm. long; divisions narrowly oblong, about 1 mm. in length, obtuse, ciliate-fringed: drupe sessile, ovoid, compressed or sublenticular, somewhat exceeding the perianth, greenish; styles more or less persistent. — MEXICO. State of Hidalgo: near Trinidad, 1904, *C. G. Pringle*, no. 8983 (hb. Gr.).

Although no staminate flowers of the plant here described are at hand, yet there can be no doubt that its affinity is with the *Celtideae*, and that it represents moreover a genus, hitherto unknown, related on the one hand to *Celtis*, and on the other to *Trema*. From both of these genera it differs in having opposite instead of alternate leaves. Habitally it is more like *Trema*, but from this genus it not only differs in leaf arrangement, but also in having pedunculate more or less open cymes, and broad cotyledons. The genus is named in honor of Señor Filemón L. Lozano, a keen and enthusiastic assistant of Mr. Cyrus G. Pringle.

Ficus subrotundifolia, n. sp. A small tree: stem and branches covered with a grayish or brownish bark; ultimate branches pubescent, especially at the nodes: leaves petiolate, subrotund to ovate-oblong, 4 to 7 cm. long, 3.5 to 6 cm. broad, rounded to obtuse at the apex, subtruncate to obtuse at the base, entire to subundulate-margined, somewhat villous-pubescent on both surfaces in the young stages, later glabrate, white-granulose on the upper surface, rather conspicuously netted-veined beneath; petioles 1 to 2.5 cm. long, more or less densely subsericeous-pubescent: receptacles sessile, axillary, usually in pairs, spherical, 8 to 12 mm. in diameter, greenish, covered with reddish-brown spots, densely short-pubescent to essentially glabrous. — MEXICO. State of Morelos: ravines near Cuernavaca, altitude 1525 m., 9 June, 1904, *C. G. Pringle*, no. 8931 (hb. Gr.). State of Jalisco: Guadalajara, *C. G. Pringle*, no. 11,850 (hb. Gr.).

Oxybaphus linearifolius, Watson. Proc. Am. Acad. xvii. 375 (1882). This species, described from specimens secured by Mr. J. G. Lemmon on the plains near Apache Pass, Arizona, in 1881, has again been found by Dr. A. Davidson along the Metcalf Road, near Metcalf, May 27, 1900, no. 327^a (hb. Gr.). Dr. Davidson's specimens conform in every

detail with the original and with Dr. Watson's description; they show, moreover, that the slender upright stems originate from a distinctly perennial base.

Cassia (§ *Chamaechristae*) *leptadenia*, n. sp. Annual: stem simple or branched, erect, 1 to 4 dm. high, pubescent with an upwardly subappressed puberulence commonly intermixed with long horizontally spreading hairs: leaves short-petiolate, 1 to 5 cm. long, 1 to nearly 2 cm. broad; leaflets sessile, usually 24 to 36 (sometimes fewer), linear-oblong, 5 to 10 mm. long, 1 to 2.5 mm. broad, mucronate, rather conspicuously ciliate, glabrous on both surfaces or with a few scattered hairs beneath, somewhat oblique at the base; rhachis pubescent with long spreading hairs, slightly canaliculate above, bearing just below the first pair of leaflets a stipitate tack-shaped gland; petioles 2 to 5 mm. long; stipules oblique-lanceolate, 3 to 6 mm. long, ciliate: flowers 1 to 3, on short axillary or supra-axillary branches, small, about 0.5 cm. long, and less than 1 cm. in diameter; pedicels 3 to 5 mm. long, 1-2-bracteate above the middle, somewhat elongated at maturity; sepals lanceolate, acute, slightly pubescent: petals unequal, pinkish or yellowish-pink; stamens 5 to 8, of different lengths: ovary appressed-pubescent: legume 2 to 4.5 cm. long, 3 to 4 mm. broad, on upwardly arched pedicels, subappressed-pubescent: seeds flat, oblique, about 2.5 mm. long. — *C. nictitans*, Gray, Pl. Wright. 1: 59 (1852), not L.; Torr. Bot. Mex. Bound. 59, not L.; Rothrock in Wheeler's Report, 106, not L. — UNITED STATES. Texas: gravelly plains near Comanche Springs, Dr. J. M. Bigelow (hb. Gr.); 48 km. east of El Paso, May to October, 1849, Chas. Wright, no. 154 (hb. Gr.). New Mexico: without locality and number, Chas. Wright, coll. of 1851 (hb. Gr.); Organ Mts., 1 September, 1897, E. O. Wootton, no. 435 (hb. Gr.), distributed as "*Cassia calycoides*, DC."; Florida Mts., 27 August 1895, A. I. Mulford, no. 1038^a (hb. Gr.). Arizona: without locality, coll. of 1884, C. G. Pringle, no. 92 (hb. Gr.); Blue River, Clifton, 1 September, 1903, Dr. A. Davidson, no. 1340 (hb. Gr.); Sonoita Valley, 1874, Dr. J. T. Rothrock, no. 629 (hb. Gr.). MEXICO. State of Sonora: Ojo de Gavilan, August, 1851, Geo. Thurber, no. 1060 (hb. Gr.). State of Durango: vicinity of the city of Durango, April to November, 1896, Dr. Ed. Palmer, no. 654 (hb. Gr.). State of Oaxaca: Valley of Etla, September, 1895, C. Alvarez, no. 754 (hb. Gr.).

Var. *mensalis*, n. var. Stem 3 to 5 dm. high: leaves 2.5 to 9 cm. long; leaflets 12 to 50 (6 to 25 pairs), 1 to 1.5 cm. long, 2 to 3 mm. broad; pedicels 2 to 8 mm. long: other characters of the species. — MEXICO. State of Chihuahua: Hacienda San Miguel, near Batopilas,

September, 1885, *Dr. Ed. Palmer*, no. 175 (hb. Gr.), a strong vegetative specimen. State of Sonora: vicinity of Guaymas, on mesas among grass, October, 1887, *Dr. Ed. Palmer*, no. 242 (hb. Gr.).

Var. *jaliscense*, n. var. Stem rather freely branching from the base: legume pubescent with spreading hairs: in other characters like the species. — MEXICO. State of Jalisco: Guadalajara, September, 1886, *Dr. Ed. Palmer*, no. 460 (hb. Gr.). State of Guerrero: vicinity of Acapulco, October, 1894, to March, 1895, *Dr. Ed. Palmer*, no. 23 (hb. Gr.).

The species here described has been confused hitherto with *Cassia nictitans*, L.; it differs, however, in having a constantly narrower pod, smaller (except in var. *mensalis*) leaflets which are conspicuously ciliate, and also in having usually long spreading hairs as well as shorter subappressed ones on the stem. *C. nictitans* was originally ascribed to Virginia; and from a large suite of specimens now at hand its range in North America may be given as from Vermont and Massachusetts to Georgia, west to New York, Missouri, Kansas, and eastern Texas. *C. leptadenia* occurs in Texas, as far as yet known, west of the Pecos River only, and extends into New Mexico and Arizona southward through the dry parts of Mexico to Oaxaca. *C. leptadenia* is similar to *C. aspera*, Muhl., and to *C. Simpsoni*, Pollard, but from both of these species it is readily separated by the characters of the foliage and pod.

Argythamnia Pringlei, n. sp. Shrub: stem somewhat angulate, covered with a whitish cortex, glabrous; ultimate branches sericeous-tomentose: leaves petiolate, subrotund to oblong-lanceolate, 1.5 to 7 cm. long, 1.2 to 3 cm. broad, rounded to short-acuminate and acute at the apex, entire or denticulate, rounded to obtuse at the base, pale green and pubescent above, densely white sericeous-tomentose beneath; lateral nerves 4 to 6 on either side of the midrib, divergent: racemes axillary, pedunculate, few-flowered, subsericeous-pubescent; peduncles slender, 1.5 to 2.5 cm. long; bracts narrowly lanceolate, acuminate, persistent: flowers monoecious: staminate flowers 4 to 8; sepals linear-lanceolate, acute, 0.5 cm. long; petals unguiculate, oblong-ovate, about two-thirds as long as the calyx, obtusish, pubescent on the back along the midrib, greenish: pistillate flowers usually 1 at the base of each floral cluster; pedicels about as long as the subtending bract; calyx subangulate-winged in cross-section; sepals ovate, subacuminate, acute, 7 to 8 mm. long; petals minute, spatulate, about 1 mm. long; ovary densely pubescent; styles 3-parted, the divisions again 3-parted and crenately lobed: mature capsule not seen. — MEXICO. State of Morelos: sides of a bar-

ranca near Cuernavaca, altitude 1525 m., 17 June, 1904, *C. G. Pringle*, no. 8819 (hb. Gr.).

The species here proposed has its nearest affinity with *A. heterantha*, Muell. Arg., but differs in leaf-outline, the more divergent lateral nerves of the leaves, the ovate petals, and in the densely pubescent ovary.

EUPHORBIA CAMPESTRIS, Cham. & Schlecht., var. *subpuberula*, n. var. Stems 3 to 6 dm. high, glabrous below, puberulent above: leaves lanceolate to lance-ovate, 1 to 3.5 cm. long, 3 to 14 mm. broad; leaves and bracts of the inflorescence ovate and mucronate-acute. — MEXICO. State of Hidalgo: wet banks of river below Trinidad Iron Works, altitude 1740 m., 25 April, 1904, *C. G. Pringle*, no. 8906 (hb. Gr.). Distinguished from the species by the puberulence of the upper part of the stem and floral branches, by the less crowded and broader lanceolate to lance-ovate leaves, and by the more ovate or less rotund leaves and bracts of the inflorescence.

Clethra Alcoceri, n. sp. A small tree; ultimate branchlets terete or subangled, striate, densely covered with a close fine reddish brown stellate tomentum: leaves petiolate, elliptic-lanceolate to oblong-obovate, 7 to 14 cm. long, 3 to 6 cm. broad, obtuse to short-acuminate and submucronate-acute, shallowly sinuate-dentate to merely denticulate, slightly unsymmetrical at the base, dark green above, paler beneath, minutely stellate-puberulent on both surfaces; midrib and lateral nerves prominent beneath; petioles 1 to 1.5 cm. long, rather densely stellate-pubescent: inflorescence terminal, consisting of paniculately disposed racemes, the latter 1 to 2 dm. in length; rhachis striate, densely tawny stellate-tomentose; pedicels 2 to 3 mm. long, about equalling the caducous bracts: flowers 5 to 6 mm. high, equally broad: calyx about two-thirds as long as the corolla; divisions of the calyx ovate, obtuse, closely stellate-pubescent on both surfaces: petals white, obovate or obovate-oblong with thin subfimbriate margins: stamens included; filaments glabrous: ovary densely pubescent with silvery white stellate or branched hairs: mature fruit not seen. — MEXICO. State of Hidalgo: barranca near Trinidad Iron Works, altitude 1600 m., 22 August, 1904, *C. G. Pringle*, no. 8923 (hb. Gr.). The species is dedicated to Señor Dr. Gabriel Alcocer of the National Medical Institute, City of Mexico.

Halenia chlorantha, n. sp. Annual, glabrous throughout: stems erect, 4 dm. or more high, simple below, branched above, narrowly winged: leaves ovate to lanceolate, including the petiole 3 to 6 cm. long, 0.5 to 1.8 cm. broad, acute, entire, somewhat gradually narrowed below into the petiole, 3- (5-) nerved; petioles of the lower leaves about

equalling the blade, those of the other leaves gradually shorter upwardly on the stem: inflorescence terminating the stem and branches in several-flowered cymose clusters; pedicels 8 mm. or less in length, erect: calyx deeply 4-parted; divisions of the calyx lanceolate, acute, about 4 mm. long: corolla 8 to 10 mm. long, greenish; tube of the corolla about equalling the ovate-oblong short-acuminate lobes; spurs subperpendicular, slightly incurved at the base: capsule oblong, 12 mm. long, curved above, acuminate, glabrous: seeds subspherical, 1 mm. in diameter, smooth. — MEXICO. State of Hidalgo: wet woods near Trinidad Iron Works, altitude 1735 m., 11 July, 1904, *C. G. Pringle*, no. 8939 (hb. Gr.).

Phacelia Coulteri, n. sp. An erect rather stout herb: stem branched above, reddish brown, pubescent with long spreading villous hairs intermixed with stipitate glands: leaves bi-tripinnatisect, oblong to oblong-ovate in general outline, 2 to 9 cm. long, 1 to 6 cm. broad, hirsute on both surfaces with a few glandular hairs intermixed; segments narrow, obtuse to acute: inflorescence consisting of villous-hirsute and somewhat glandular scorpioid cymes subcorymbosely disposed; pedicels 1 mm. or less in length: calyx deeply 5-parted; divisions of the calyx unequal, linear to linear-oblong or subspatulate, 2.5 to 3 mm. long, obtusish, villous-pubescent intermixed with short-stipitate glandular hairs: corolla narrowly campanulate, 4 to 5 mm. long, light blue to white, glabrous; tube 2.5 to 3 mm. long, bearing within on either side of the filaments a small thin reflexed valve; lobes of the corolla subrotund, 2 mm. broad, subentire or minutely denticulate: stamens exserted: ovary hirsute-pubescent above, 4-ovuled: style short-stipitate, glandular at the base: capsule ovoid, 2.5 to 3 mm. long, pubescent above; seeds 4, from 1.5 to 2 mm. long, somewhat scrobiculate or subfoveolate. *P. glandulosa*, Hemsley, Biol. Cent.-Am. Bot. ii. 359 (1882), not Nutt., as to pl. *Coulter*. — MEXICO. State of Hidalgo: fields about Buena Vista Station, altitude 2590 m., 4 August, 1904, *C. G. Pringle*, no. 8988 (hb. Gr.). State of Vera Cruz: Real del Monte, *Dr. Thos. Coulter*, no. 921 (hb. Gr.).

The latter specimen in the Gray Herbarium bears the following note in the handwriting of Dr. Gray, "Between *P. glandulosa* & *P. tanacetifolia* = latter = *tanacetifolia*." Dr. Gray also placed a question mark opposite the printed word Mexico on the Coulter label, evidently inferring that the plant came from California instead of Mexico; but as Mr. Pringle's specimen above cited is identical in every regard with the Coulter plant there can be no doubt, as Hemsley indicates, that Coulter's

specimen no. 921 was collected in Mexico. With *P. tanacetifolia* Benth., the species here described has little more than generic affinity. In certain forms of *P. tanacetifolia* the leaves are not unlike those of *P. Coulteri*, but the smaller flowers, shorter calyx, and smaller ovoid capsule of the latter readily separate the two species.

Hemsley, in the *Biologia Centrali-Americana*, Botany, ii. 359, refers the Coulter plant above cited to *P. glandulosa* Nutt. A careful comparison of *P. Coulteri* with the type and with authentic material of Nuttall's species shows very clearly that we have to deal with two quite distinct plants. Contrasted with *P. glandulosa* the Mexican *P. Coulteri* differs in having more divided leaves, smaller flowers, shorter capsules, and a more villous-hirsute stem. Habitally *P. Coulteri* most closely resembles *P. neo-mexicana*, Thurber (*P. alba*, Rydb.), but here again the somewhat more divided leaves, the subentire corolla-lobes, constantly shorter and more ovoid capsule, and smaller seeds of the former enable one to distinguish it at once from the Thurber species.

Mimophytum, n. gen. of *Boraginaceae*. Calyx 5-parted, persistent but not enlarged in fruit. Corolla tubular-campanulate, with a short tube and a spreading 5-lobed limb, bearing in the throat 5 blunt folds or scales; lobes 5, imbricated. Stamens 5, adnate to the corolla-tube, included; anthers small, obtuse. Ovary 4-lobed; style terete; stigma compressed-capitate; ovules subhorizontal. Nutlets 4, sometimes only 1 or 2 attaining maturity, depressed, obliquely affixed to the gynobase, and when removed revealing an ovate-triangular scar, convex above, flattened beneath, glochidiate over the entire upper surface. Seeds subhorizontal. Herbaceous perennials with trailing habit, alternate leaves, racemose inflorescence, and pale blue or whitish flowers.

M. omphalodoides, n. sp. Stems 6 dm. or more in length, somewhat bifurcately branched, glabrous or sparingly pubescent: leaves petiolate; blade ovate, acuminate, 2 to 7 cm. long, 1 to 4 cm. broad, acute, entire, deeply cordate, dark green and sparingly sub-appressed-hirsute above, becoming somewhat tuberculate in age, paler and strigillose beneath, thin and membranous, 5-7-nerved from the base; petioles slender, 1 to 6 cm. in length, pubescent with spreading hairs: inflorescence terminating the stem and branches in elongated slender subsecund strigillose racemes; pedicels filiform, 2 cm. or less in length, spreading or somewhat recurved: calyx about 4 mm. high, deeply 5-parted; divisions lance-oblong, acute: corolla 5 to 6 mm. long, 5-lobed to near the middle; tube upwardly expanded, bearing in the throat opposite the base of each lobe an oblong blunt fold or scale somewhat pruinose on the

inner face; lobes oblong-rotund, spreading: nutlets subcircular, plano-convex, 4 to 5 mm. in diameter, glochidiate-spinose over the entire upper surface, espinose beneath, minutely strigillose on both surfaces. — MEXICO. State of Puebla: under wet cliffs in the barranca below Honey Station, altitude 1525 m., 24 May, 1904, *C. G. Pringle*, no. 8822 (hb. Gr.).

The plant here described but for the character of the fruit might well be placed under the genus *Omphalodes*, being in habit and superficial characters almost the counterpart of *O. acuminata*, Rob. The fruit, however, bears a striking contrast to the saucer-like nutlet of *Omphalodes*. It is on the other hand more like that of *Cynoglossum*, but is more distinctly discoid, and bears the glochidiate spines on the upper side only. The trailing habit, moreover, is quite unlike anything known in *Cynoglossum*. On the whole it seems best to characterize the plant in question as a new genus based on the technical characters of its fruit and its habit, occupying a position in the order somewhat intermediate between *Omphalodes* and *Cynoglossum*.

MYOSOTIS PALUSTRIS, Lam. Fl. Fr. ii. 283 (1778). To this species the following specimens are to be referred: MEXICO. State of Hidalgo: near Trinidad, 25 November, 1903, *C. G. Pringle*, no. 11,882 (hb. Gr.); in shallow water along river ledges below Trinidad Iron Works, altitude 1700 m., 14 June, 1904, no. 8933 (hb. Gr.). The species seems not to have been recorded hitherto from Mexico.

Citharexylon Pringlei, n. sp. Shrub, 3 to 5 m. high, glabrous throughout: stem and branches covered with a grayish bark; branchlets somewhat flattened at the nodes: leaves short-petiolate, elliptic-lanceolate to lanceolate, 2.5 to 8 cm. long, 1 to 2.5 cm. broad, merely obtuse or short-acuminate and obtuse, entire or rarely subdentate towards the apex, narrowed at the base into a 3 to 5 mm. long petiole, dark green and shining above, paler and glandular-punctate beneath with larger circular glands scattered over the entire under surface: inflorescence terminating the stem and branches in elongated arcuate-recurved more or less secund racemes; bracts subulate, nearly or quite equalling the pedicels, 1 to 2 mm. in length: calyx cupulate, about 3 mm. high, 5-angled in cross section, sinuately 5-denticulate, slightly pubescent about the orifice on the inner surface, often purplish: corolla bicolorous, tubular-funnelform, about 4 mm. long, 5-lobed, externally glabrous, densely pubescent in the throat; tube white; lobes subrotund, scarcely more than 1 mm. long and broad, slightly pubescent on the inner or upper surface, deep purple or magenta colored: mature fruit not seen. — MEXICO. State of Hi-

dalgo: barranca below Trinidad Iron Works, altitude 1525 m., 13 July, 1904, *C. G. Pringle*, no. 8932 (hb. Gr.).

The glabrous character of the plant, with the smooth shining upper surface of the leaves, the gracefully recurved racemes and the bicolorous corollas, render this species of easy recognition, and readily separated from all known species of the genus. Its affinity, however, is apparently with the little known *C. lucidum*, Schlecht. & Cham.

Cedronella Wrightii, n. sp. An herbaceous perennial: stem erect, 5 dm. or more high, densely short-pubescent: leaves petiolate, ovate to ovate-lanceolate, 1 to 5 cm. long, 0.5 to 3 cm. broad, obtuse or acute, more or less irregularly crenate-dentate, closely puberulent on both surfaces and somewhat canescent beneath: inflorescence an elongated verticillate spike; the lower verticillasters becoming remote and subtended by foliar bracts, short-pedunculate: flowers small, 6 to 7 mm. long in anthesis: calyx short-tubular, subbilabiate, pubescent especially on the tube; calyx-teeth narrowly lanceolate or lance-linear, whitish or tinged with purple, the three upper teeth nearly or quite as long as the tube of the calyx, the two lower teeth about two-thirds as long as the upper: corolla about one-third longer than the calyx, purplish in fresh specimens, becoming more or less faded in the dried state: stamens slightly exserted: nutlets smooth, subtriangular in cross section with convex back, about 1 mm. long. — *C. pallida*, Torr. var. Bot. Mex. Bound. 133 (1859), in part, as to pl. *Wright*, no. 1534. *C. mexicana*, var. *cana*, Gray, forma, Syn. Fl. 1, pt. 2, 377 (1886). *Hyptis spicata*, Torr. l. c. 129. — MEXICO. State of Sonora: mountains near Sta. Cruz, *Wright*, no. 1534 (hb. Gr.); San Bernardino, *Thurber*, no. 780 (hb. Gr.). UNITED STATES. Arizona: Blue River, 8 September, 1902, *Dr. A. Davidson*, no. 840 (hb. Gr.).

The species here proposed has been much confused hitherto, as the literature cited would indicate. Dr. Gray, in his treatment of the genus *Cedronella* for the Synoptical Flora, finally passed *Wright's* specimen above cited as a small flowered form of *C. mexicana*, var. *cana*, with the comment "fl. not well developed." More material is now at hand, and careful dissections and comparisons of the *Wright*, *Thurber*, and *Davidson* plants show the flowers of each to be perfectly normal, and many, too, are fully developed. These collections evidently represent one and the same species, differing from all other known American species except *C. micrantha* in the size of the flowers and deeply toothed calyx. *C. Wrightii* is distinguished from *C. micrantha* in having a longer more interrupted verticillate spike, longer calyx-teeth, and in the character of the pubescence.

STACHYS BORAGINOIDES, Ch. & Schl. *Linnaea*, v. 100 (1830); DC. *Prodr.* xii. 467; Hemsl. *Biol. Cent.-Am. Bot.* ii. 551. MEXICO. State of Vera Cruz: Jalapa, *Schiede & Deppe*; in moist places near Jalapa, altitude 1200 m., 13 April, 1899, *C. G. Pringle*, no. 7788 (hb. Gr.).

Var. *glandulosa*, n. var. Branches and inflorescence pubescent as in the species, but with long-stipitate glandular hairs intermixed: lower verticillasters sometimes developed into pedunculate racemose-spikes: calyx copiously glandular-pubescent. — MEXICO. State of Hidalgo: barranca below Trinidad, altitude 1675 m., 5 May, 1904, *C. G. Pringle*, no. 8894 (hb. Gr.).

Stachys Pringlei, n. sp. An herbaceous perennial: stems erect or ascending, about 9 cm. in length, green or purplish, villous-hirsute: leaves petiolate, oblong to oblong-ovate, 2 to 5 cm. long, 0.5 to 2.5 cm. broad, rounded to obtuse at the apex, crenate-dentate, cordate, dark green above, paler beneath, hirsute-pubescent on both surfaces; petioles of the lower leaves 3 cm. long, villous-hirsute, gradually diminishing upwardly on the stem: inflorescence elongating in age, becoming 2 dm. or more long: verticillasters usually 6-flowered, subtended by lance-oblong to linear foliaceous acute bracts longer or shorter than the flowers, the lower verticillasters 4.5 cm. apart: flowers short-pedicellate, in anthesis 13 to 15 mm. long: calyx campanulate, short-hirsute, 5 to 6 mm. long; teeth acerose-acuminate, about equalling the tube: corolla conspicuously bilabiate, 13 to 15 mm. long, pale purple fading to nearly white; tube about 8 mm. long, bearing a ring of hairs just above the base, pubescent in the throat; galea erect, externally pubescent; lower lip spreading, about 6 mm. long, maculate, 3-lobed, the median lobe broader than long, emarginate: stamens nearly equalling the galea; filaments pubescent; anthers deep purple: nutlets black, minutely roughened, about 1.5 mm. in diameter. — MEXICO. State of Hidalgo: woodlands near Trinidad Iron Works, altitude 1735 m., 11 July, 1904, *C. G. Pringle*, no. 8941 (hb. Gr.). This species suggests the little known *S. mexicana*, Benth., which, however, is said to be hispid on both surfaces of the leaves and on the calyx, characters that do not apply at all to the plant here described.

Satureia procumbens, n. sp. Stems procumbent or somewhat ascending, slender, 1 to 2.5 dm. in length, rooting at the lower nodes, closely puberulent: leaves petiolate, ovate or broadly spatulate, including the petiole 7 to 22 mm. long, 3 to 12 mm. broad, rounded to subobtusate at the apex, crenate to entire, narrowed below to the slender puberulent petiole, nearly or quite glabrous on both surfaces, paler and glandular-punctate beneath: verticillasters 2-4-flowered; pedicels 3 to 4 mm. long,

puberulent: flowers in anthesis 12 to 13 mm. long: calyx bilabiate, 6 to 7 mm. long, 13-nerved, glabrous or with a few scattered hairs on the outer surface, glandular-punctate, pubescent in the throat; anterior lip of 2 rather slender long-ciliated teeth; posterior lip of 3 short obtuse or blunt teeth: corolla 12 mm. long, pale purple, somewhat pubescent in the throat; anterior lip spreading, 3-lobed; posterior lip suberect, emarginate: stamens 4, unequal; the anterior pair much longer than the posterior, and with somewhat larger anthers: nutlets ovoid, about 1 mm. long, minutely scrobiculate. — MEXICO. State of Hidalgo: shaded banks, barranca below Trinidad Iron Works, altitude 1685 m., 5 May, 1904, *C. G. Pringle*, no. 8895 (hb. Gr.). Mr. Pringle's plant here cited was distributed under the name "*CALAMINTHA*."

Salvia (*Heterosphace*) *Davidsonii*, n. sp. An herbaceous perennial: stems slender, ascending or erect, finely pubescent: leaves petiolate, the lower or basal ones lyrate-pinnatifid, the upper rhombic-ovate, 1 to 3 cm. long, 0.5 to 2.5 cm. broad, sinuately lobed to subentire, pale green in color at least in the dried state, sparingly pubescent on both surfaces, resiniferous-dotted, commonly 3-nerved from a symmetrical or not infrequently unequal base; petioles narrowly winged, 1 to 6 cm. long: flowers solitary in the axils of the upper leaves or disposed in terminal few-flowered verticillate racemes: pedicels erect or slightly recurved, 5 mm. or less in length: calyx externally short-hirsute-pubescent especially on the rather conspicuous veins, dotted with yellowish glands, sparingly ciliate-hirsute in the throat: corolla about 1 cm. long, red: nutlets smooth. — Arizona: Chiricahui Mts., September, 1881, *Lemmon*, no. 3077 (hb. Gr.); southern Arizona, *Lemmon*, no. 492 (hb. Gr.); Metcalf, October, 1900, *Dr. A. Davidson*, no. 615 (hb. Gr.).

S. Davidsonii is most nearly related to *S. Henryi*, Gray, to which species one of the Lemmon plants above cited was referred by the late Dr. Sereno Watson. The several specimens now at hand, however, representing *S. Davidsonii*, are so uniform in habit, foliar and floral characters, and so distinct in leaf-outline, size of the corolla, etc., from *S. Henryi* and other species of the group, that the writer has no hesitation in regarding them as representing a separate and well defined species.

Bassovia stellata, n. sp. Shrub, 2 m. or more in height; stem covered with a reddish brown cortex; branches, as well as the leaves, pedicels and calyx, tawny stellate-pubescent, somewhat glabrate: leaves usually in pairs and of unequal size, ovate to ovate-lanceolate, 2 to 8 cm. long, 1 to 3 cm. broad, often acuminate, obtuse or acute, dark green

above, a little paler beneath, stellate-pubescent on both surfaces, more densely so beneath, somewhat glabrate especially on the upper surface, entire, narrowed below to an obtuse or rounded base; petioles 3 to 10 mm. long, stellate-tomentose: inflorescence axillary, usually several-flowered; pedicels 6 to 12 mm. long, upwardly enlarged: calyx about 2 mm. high, crenately 5-lobed: corolla rotate or rotate-campanulate, about 7 mm. high and 8 mm. in diameter, 5-lobed to a little below the middle, pubescent in the throat; lobes ovate, obtusish, externally densely puberulent: stamens shorter than the corolla; filaments about equalling the anthers, densely pubescent with tawny matted hairs: fruit spherical, about 5 mm. in diameter, black, smooth, and glabrous. — MEXICO. State of Hidalgo: shaded bluffs of the barranca below Trinidad Iron Works, altitude 1525 m., 24 May, 1904, *C. G. Pringle*, no. 8824 (hb. Gr.).

Castilleja glandulosa, n. sp. Annual, or perennial by an indurated base, pubescent throughout with gland-tipped hairs intermixed with longer hirsutish hairs: stems usually simple, erect or nearly so, 1 to 3 dm. high, green or purplish: leaves sessile, a little dilated at the base and semi-amplexicaul, lance-attenuate, 1.5 to 5 cm. long, 1 to 6 mm. broad, acute, entire and often crenate-margined, 3-nerved from the base: inflorescence subspicate, 2 to 18 cm. in length, the lowermost flowers about 1 cm. apart; bracts of the inflorescence lance-attenuate to oblong, somewhat broader than the stem-leaves, the lower bracts entirely foliaceous, the middle and upper ones green below, and as well as the calyx-lobes tipped with color from yellow to scarlet: flowers sessile, in anthesis 2 to 2.8 cm. long: calyx about equally divided anteriorly and posteriorly, 2.5 cm. or less in length; lateral lobes oblong, about 8 mm. long, obtusish to slightly emarginate: corolla 2 to 2.7 cm. long, exceeding the calyx by 3 to 5 mm.; galea erect, 7 to 9 mm. long, with a greenish, glandular-puberulent keel and yellowish white thin margins: stamens 4, didynamous, the posterior pair a little shorter: ovary and style glabrous: capsule ovate-acuminate, 10 to 12 mm. long, smooth: seeds clavate, about 2 mm. long. — MEXICO. State of Mexico: hills near Lecheria Station, altitude 2225 m., 2 July, 1904, *C. G. Pringle*, no. 10,000 (hb. Gr.) *type*. State of San Luis Potosi: Valley of San Luis Potosi, *Schaffner*, no. 741 (hb. Gr.); 22° N. Lat., altitude 1800 to 2400 m., *Parry & Palmer*, no. 691 (hb. Gr.) Federal District: hills above Santa Fé, altitude 2400 m., 25 September, 1899, *C. G. Pringle*, no. 7979 (hb. Gr.). Valley of Mexico, *Schaffner*, no. 322 (hb. Gr.). N. W. Mexico, *Seemann*, in part (hb. Gr. under *C. lithospermoides*, HBK.).

This species is related evidently to *C. scorzonerifolia*, HBK., but differs in being glandular-pubescent throughout with longer hirsutish hairs intermixed, in having shorter narrower leaves, somewhat smaller flowers, and in having the upper floral bracts as well as the calyx-lobes orange- to scarlet-colored. From *C. lithospermoides*, HBK., with which it has been confused also, it differs in having the leaves more dilated at the base, the upper stem-leaves more attenuated, in being less hispid, and finally in having an ovate acuminate capsule.

CASTILLEJA HIRSUTA, Mart. & Gal. Bull. Acad. Brux. xii. pt. 2, 29 (1845); Walp. Rep. vi. 651; Hemsl. Biol. Cent.-Am. Bot. ii. 460. *C. obovata*, Benth. DC. Prodr. x. 528 (1846). To this species are referred specimens collected by Mr. C. G. Pringle in a barranca below Trinidad Iron Works, altitude 1525 m., 13 June, 1904, no. 8935 (hb. Gr.). Mr. Pringle's specimens agree well with the original characterization of the species except there is a tendency for the leaves to become incised-dentate or laciniate.

Lamourouxia brachyantha, n. sp. Stem about 1 m. high, branched above, yellowish green, somewhat hirsute below, densely stipitate-glandular above: leaves sessile, oblong-lanceolate to ovate, 1 to 3 cm. long, 0.5 to 1 cm. broad, acute, sharply and somewhat unequally dentate, half-clasping the stem, glandular-hirtellous on both surfaces: inflorescence racemose-paniculate; bracts of the inflorescence similar to the stem-leaves but smaller: flowers in anthesis 2 to 2.5 cm. long, short-pedicellate: pedicels 3 mm. long: calyx about 12 mm. long, 4-lobed to the middle; lobes ovate, acute, unequally dentate, and as well as the pedicels glandular-hirtellous: corolla 18 to 20 mm. long, bilabiate; posterior lip or galea conspicuously hooded, overarching the stamens, 2-lobed with the lobes soon becoming reflexed; lower or anterior lip recurved, 2-plicate-ventricose in the throat, 3-lobed with oblong rounded lobes: stamens 4, fertile; the posterior pair with smaller anthers: ovary glabrous below, above as well as the persistent style pubescent: capsule ovate, short-acuminate, about 1 cm. long. — MEXICO. State of Mexico: rocky hills, Lecheria, Valley of Mexico, altitude 2285 m., 1 July, 1904, *C. G. Pringle*, no 8815 (hb. Gr.). This species belongs to the § *Hemispadon*, Benth., and according to the revision of the genus by Robinson and Greenman in the American Journal of Science l. 169, it should be placed next to *L. rhinanthifolia*, HBK. The short corolla with its strongly hooded galea combined with the ovate dentate calyx-lobes serve to distinguish *L. brachyantha* from all other known species of the genus.

Hygrophila Pringlei, n. sp. Stems simple or branched, 6 to 10 dm.

high, subterete, green to dark purple, pubescent with spreading or sub-reflexed short fine hairs: leaves lanceolate, 2.5 to 6.5 cm. long, 0.3 to 1.5 cm. broad, acuminate, acutish, entire, hirtellous-margined, glabrous or with a few scattered hairs on both surfaces, often reflexed: flowers in dense axillary clusters; bracts linear, attenuate: calyx about 1.5 cm. long, equally 5-parted to a little below the middle; tube 5-angled in cross-section, essentially glabrous, minutely lineolate; divisions lance-attenuate, keeled, sparingly pubescent on the keel, ciliate-margined: corolla tubular-funnelform, curved, bilabiate, 2.5 to 3 cm. long, crimson, externally pubescent; tube gradually amplified above, about 2 cm. long; posterior lip suberect, 2-lobed; anterior lip spreading, 3-lobed: stamens about equalling or sometimes slightly exceeding the upper lip; filaments below minutely pubescent, above glabrous: ovary glabrous; style puberulent: ovules two in each cell: mature fruit not seen. — MEXICO. State of Michoacan: hills near Uruapan, altitude 1675 m., 13 October, 1904, *C. G. Pringle*, no. 8847 (hb. Gr.).

Although mature fruit of this species has not been seen by the writer, yet on account of the convolute corolla-lobes and other technical characters of the flower, as well as the general habit and inflorescence, the plant is confidently placed in the genus *Hygrophila*.

Deppea microphylla, n. sp. A much-branched shrub: stem and branches covered with a grayish bark; wood reddish; the ultimate branchlets puberulent: leaves somewhat elliptic to oblanceolate or subspatulate, including the petiole 6 to 15 mm. long, 2.5 to 5 mm. broad, obtuse, entire, dark green above, paler beneath, glabrous on both surfaces or with a few scattered crisp hairs on the upper surface in the very early stages, narrowed below into a puberulent petiole: inflorescence terminal and axillary; peduncles 1-2-flowered, usually unibracteate, 6 mm. or less in length; pedicels slender, 2 to 5 mm. long: calyx turbinate or obconical, 5-lobed, glabrous; lobes linear-oblong, 1 to 1.5 mm. long, obtusish, about as long as the adnate tube, persistent: corolla rotate, yellow; tube 1.5 mm. long; lobes oblong, 6 mm. long, 2.5 mm. broad, rounded or obtusish at the apex: stamens exserted: fruit an obconical capsule, 2 to 3 mm. long, longitudinally ribbed, loculicidally dehiscent and the two halves later separating along the septa: seeds small, angled. — MEXICO. State of Hidalgo: river bluffs below Trinidad Iron works, altitude 1735 m., 26 April, 1904, *C. G. Pringle*, no. 8907 (hb. Gr.). A very distinct species and readily separated from all the hitherto known members of the genus by the small leaves and few flowers.

Galium pendulum, n. sp. Stems slender, 1 to 2.5 m. in length,

hirsute to nearly glabrous, inconspicuously hispidulous along the angles: leaves in fours, elliptic-oblong to subobovate, 0.5 to 1 cm. long, one-half to two-thirds as broad, abruptly short-acuminate, acutish, sparingly hirsute on both surfaces, entire, ciliate, often somewhat revolute-margined, narrowed below to a subpetiolate base, 3-nerved, punctate with oblong pellucid glands: inflorescence an elongated many-headed cymose panicle; lateral branches of the inflorescence dichotomously branched; bracts small; pedicels 1 to 14 mm. long, glabrous: flowers 2 to 3 mm. high: calyx-limb obsolete: corolla rotate-campanulate, about 2 mm long, 4-dentate to the middle; lobes ovate, acute: mature fruit didymous, 1.5 mm. long, 2 mm. broad, pubescent with upwardly incurved or subappressed uncinat-hispid hairs; the two halves of the fruit often separating or diverging at maturity. — MEXICO. State of Hidalgo: hanging from wet cliffs and banks, barranca below Trinidad Iron Works, altitude 1585 m., 6 May, 1904, *C. G. Pringle*, no. 8985 (hb. Gr.). The pendulous habit, quaternate leaves, elongated paniculate cyme with its spreading dichotomous branches, and the upwardly subappressed-hispid fruit abundantly characterize this species, and enable one to readily recognize it among all the other species of the genus. Its affinity is with *G. Pringlei*, Greem., on the one hand, and *G. uncinulatum*, DC., on the other.

Relbunium mazocarpum, n. sp. Stems prostrate or reclining, slender, 2 to 30 cm. long, glabrous; internodes longer or shorter than the leaves: leaves in fours, ovate-elliptic to elliptic-lanceolate, 1 to 5 mm. long, one-half as broad, terminated by a deciduous setiform mucro, entire, sparingly hirsute above, glabrous beneath: inflorescence axillary: peduncles slender, 4 mm. or less in length, 2-bracteate above; bracts opposite, similar to the leaves but smaller: flowers short-pedicellate: calyx-limb obsolete: corolla rotate, less than 2 mm. in diameter; lobes ovate, acute, externally bearing a few stiff hairs: ovary and mature fruit densely papillose-roughened, in the dried state appearing somewhat scaly. — MEXICO. State of Hidalgo: moist banks, barranca below Trinidad Iron Works, altitude 1675 m., 6 May, 1904, *C. G. Pringle*, no. 8834 (hb. Gr.). Related to *R. sphagnophilum*, Greenm., and *R. humile*, Schum., but differs from the former in being pubescent on the upper leaf-surface and in having a papillose-roughened instead of glabrous and smooth fruit; from the latter species it differs in having a papillose instead of pubescent fruit.

Viburnum caudatum, n. sp. Shrub or small tree, 4 to 6 m. high: stem and branches covered with a reddish brown cortex, subterete;

branchlets somewhat fuscous, glandular-puberulent: leaves ovate to rhombic-ovate, 9 to 13 cm. long, 5 to 9 cm. broad, caudate-acuminate, acute, subentire, 2-4-glandular-toothed at the rounded to cordate base, dark green above, paler beneath, slightly glandular-puberulent on the veins and bearing small patches of white stellate hairs at the junction of midrib and lateral nerves beneath, otherwise glabrous; petioles 8 to 12 mm. long, fuscous, canaliculate above, glandular-puberulent: inflorescence terminating the stem in a glandular-puberulent compound umbel, about 8 cm. in diameter; peduncle about 4 cm. long; rays of the umbel usually 7, from 1.5 to 2.2 cm. long: flowers many: tube of the calyx linear, 3 mm. long, compressed, densely glandular-puberulent; calyx-teeth obtusish, ciliolate: corolla rotate-campanulate, 6 to 7 mm. in diameter, white, 5-lobed to the middle; lobes ovate-rotund, reflexed: mature fruit not seen. — MEXICO. State of Hidalgo: barranca below Trinidad Iron Works, altitude 1525 m., 24 May, 1904, *C. G. Pringle*, no. 8826 (hb. Gr.).

This species is related evidently to *V. sulcatum*, Hemsl., but differs in having essentially terete instead of angulate-sulcate branches, caudate-acuminate larger leaves with a distinctly acute apex, and in not being in the least tomentose on the peduncle or under leaf-surface.

Viburnum ciliatum, n. sp. Shrub: stem and branches subterete, covered with a grayish or somewhat purplish cortex, glabrous; branchlets sulcate-angled, at first pubescent but soon glabrate: leaves broadly ovate, 4 to 7.5 cm. long, 3 to 5 cm. broad, somewhat acuminate, acute, sinuate-dentate, conspicuously ciliate, rounded to shallowly cordate at the base, dark green and except for a few scattered hairs near the margin glabrous above, sparingly hirsute intermixed with a few minute glandular hairs on the veins beneath, sometimes with small patches of stellate tomentum at the junction of midrib and lateral nerves, otherwise glabrous; petioles short, 5 mm. or less in length, pubescent with a few scattered hirsute hairs: inflorescence a terminal slightly glandular-puberulent compound umbel, 3 to 6 cm. in diameter; peduncles 1 to 2.3 cm. long; rays of the umbel usually 5, from 5 to 14 mm. long: flowers numerous: calyx-tube elongate-turbinate, about 2 mm. long, glabrous; calyx-teeth obtuse: corolla rotate-campanulate, 6 to 7 mm. in diameter, white, 5-lobed to the middle; lobes subrotund, spreading: fruit not seen. — MEXICO. State of Hidalgo: wet woodlands near Trinidad Iron Works, altitude 1675 m., 30 April, 1904, *C. G. Pringle*, no. 8881 (hb. Gr.).

The species to which *V. ciliatum* seems most nearly related is *V. mem-*

branaceum, Hemsl., but differs in having larger leaves which are entirely devoid of stellate hairs on the upper surface, in having very sparingly hirsute not tomentose petioles, and finally in having from 6 to 9 lateral veins on either side of the midrib instead of 4 or 5.

Valeriana calcicola, n. sp. An erect herbaceous annual: stem simple to the inflorescence, springing from a subterranean tuberous root, 8 to 9 dm. high, densely puberulent below, glabrous above: radical leaves not seen: stem leaves 1 to 3 pairs, bipinnatisect, oblong to oblong-ovate in general outline, 4 to 9 cm. long, one-half as broad, glabrous or under a lens slightly puberulent beneath; segments linear to linear-oblong, 4 to 15 mm. long, 1 to 3 mm. broad, obtuse; the uppermost pair of leaves much reduced: inflorescence a terminal paniculate cyme, when fully expanded 2 to 2.5 dm. long, 1 to 1.2 dm. broad; bracts short, narrowly ovate, 1 to 3 mm. long, acute, often subconnate at the base: flowers sessile, perfect, proterandrous: corolla subcampanulate, 2.5 to 3 mm. long, 5-lobed to the middle, purple; tube strongly gibbous at the base, densely villous in the throat; lobes at first erect, later reflexed: stamens 3, at the time of dehiscence of the anthers subincluded, later exerted: fruit somewhat flask-shaped, 3.5 mm. long, 2 mm. broad at the base, compressed, plano-convex and usually pubescent on the side of the fertile cell, 3-ribbed and glabrous on the other side with the lateral ribs prominent and rounded on the back; the persistent plumose calyx-teeth as long as or longer than the body of the fruit. — MEXICO. State of Puebla: on limestone hills near Tehuacan, 22 August, 1901, *C. G. Pringle*, no. 9622 (hb. Gr.).

Valeriana macropoda, n. sp. An herbaceous perennial: stem simple, about 3 dm. high, rising from a tuberous root, glabrous or very sparingly puberulent: leaves pinnatisect with numerous mostly crowded primary divisions and linear obtuse to acute ultimate segments, rather thick and firm in texture; radical leaves including the petiole 10 to 18 cm. long, 3 to 6 cm. broad, rhachis rather broad and continuous in breadth with the petiole, the latter 6 cm. or less in length; stem-leaves 1 to 2 pairs, the lower usually petiolate, the petioles ciliate and frequently connate, the upper pair of leaves sessile and much reduced often to mere bracts: inflorescence cymose, either simple or subcorymbosely disposed; bracts small, lance-linear, 2 mm. or less in length, acutish, green with scarious margins: flowers essentially dioecious, sessile: corolla of the staminate flowers tubular-funnelform, somewhat unequally 5-lobed, white or roseate; tube about 3 mm. long, slightly gibbous at the base, sparingly pubescent within; lobes ovate-oblong, about 1 mm. long, obtuse:

stamens 3, exserted : corolla of the pistillate flowers similar but smaller, 5-lobed to the middle : style exserted : fruit oblong-ovate, 6 to 6.5 mm. long, two-thirds as broad, crowned by the persistent plumose calyx-teeth, strongly compressed, unicostate on one side and 3-ribbed on the other, puberulent to essentially glabrous. — MEXICO. State of Mexico : hills near Lecheria Station, altitude 2225 m., 4 July, 1904, *C. G. Pringle*, no. 8998 (hb. Gr.). This species is closely related to, and possibly may prove eventually to be the same as, the inadequately characterized and obscure *V. Napus*, Lindl., but until more can be learned of the Lindley species and its identity established it seems best to regard Mr. Pringle's plant as representing a distinct species.

Valeriana Nelsonii, n. sp. An erect herbaceous perennial : stems 5 to 7 dm. high, simple or sparingly branched above, striate, glabrous, often purplish at the base : leaves bipinnatisect, oblong to oblong-ovate in general outline, including the petiole 6 to 24 cm. long, one-third as broad, glabrous ; segments linear, 0.5 to 6 cm. long, 1 to 3 mm. broad, acute or obtusish ; petioles 5 cm. or less in length ; stem-leaves 1 to 2 pairs, the upper often reduced to mere attenuated bracts : inflorescence in terminal rather close cymes ; bracts minute : flowers sessile, perfect : corolla subcampanulate, 3 mm. long, 5-lobed to or a little below the middle, roseate, proterandrous ; tube but slightly gibbous at the base, densely villous in the throat ; lobes oblong-ovate, obtuse, spreading : fruit oblong, upwardly a little narrowed, 5 mm. long, 3 mm. broad just above the base, glabrous, compressed, plano-convex, unicostate on the side of the ovuliferous cell, 3-ribbed on the other side with the lateral ribs somewhat more prominent and rounded on the back. — MEXICO. State of Durango : near El Salto, altitude 2400–2650 m., 12 July, 1898, *E. W. Nelson*, no. 4574 (hb. Gr.) ; El Oro to Guanacevi, 14 to 16 August, 1898, *E. W. Nelson*, no. 4744 (hb. Gr.). Mr. Nelson's specimens have been referred to *V. ceratophylla*, HBK., from which species they differ in having a less caespitose habit, taller stems, more crowded primary leaf-divisions and longer ultimate segments, and finally in the somewhat larger and glabrous fruit. In habit *V. Nelsonii* resembles *V. calcicola*, but it is readily distinguished by the glabrous stem, larger more oblong and glabrous fruit.

Elephantopus micropappus, Klatt, Jahrb. Hamburg. wissensch. Anstalt. ix. pt. 2, 124 (1892), not Less., is *Gomphrena perennis*, L., as is shown by an examination of Ule's no. 1184, collected in Campo near Laguna, Brazil, March, 1889, now in the Gray Herbarium from the herbarium of Dr. Klatt.

Achaetogeron ascendens, n. sp. An herbaceous perennial: stems several from a common ligneous base, subprostrate or ascending, 1 to 2 dm. in length, subappressed-hispidulous-pubescent: leaves sessile, linear and entire to subpinnatifid with short linear-acute or obtusish divisions, 1 to 2 cm. long, 1 to 5 mm. broad, hirsute-hispid: peduncles 1 to 5 cm. in length, sparingly pubescent with appressed or subappressed stiffish hairs: heads including the fully expanded rays 2 to 2.5 cm. in diameter: involucre campanulate, about 5 mm. high; bracts of the involucre in 2 to 3 series, linear or linear-lanceolate, scarious-tipped and acute, narrowly scarious-margined, hirsute-pubescent, more or less purplish: ray-flowers 2-3-seriate, numerous, fertile; rays including the tubular portion 7 to 9 mm. long, less than 1 mm. broad, white or roseate: disk-flowers many: pappus of both ray- and disk-flowers a lacinated crown of coalescent scales, mostly less than 1 mm. long, nearly or quite equalling the short tube of the corolla: mature achenes about 1 mm. long, laterally compressed, sparingly pubescent. — MEXICO. State of Hidalgo: meadows near Buena Vista Station, altitude 2530 m., 4 August, 1904, C. G. Pringle, no. 8851 (hb. Gr.).

Achaetogeron griseus, n. sp. An herbaceous perennial: stem erect, branched, about 3 dm. high, bearing several offsets at the base, green, striate, pubescent with appressed or subappressed grayish hairs: leaves of the offsets and the lower stem-leaves oblanceolate to spatulate, 3 to 8 cm. long, 0.5 to 1.5 cm. broad, obtuse or submucronate-acute, entire to more or less pinnatifid with oblong obtuse lobes, narrowed below to a subpetiolate base, subappressed-pubescent on both surfaces; upper stem- and rameal-leaves narrowly oblanceolate to lance-linear, entire: heads on rather long very pubescent peduncles, including the rays 2.5 to 3 cm. in diameter: involucre campanulate; bracts of the involucre lance-attenuate, narrowly scarious-margined and purplish, pubescent with subappressed hairs: ray-flowers numerous; rays including the tube about 1.5 cm. long, 1 mm. broad, white: disk-flowers many: pappus an inconspicuous fringed crown: achenes of both ray- and disk-flowers laterally compressed, slightly pubescent. — MEXICO. State of Durango: vicinity of the city of Durango, April to November, 1896, Dr. Edward Palmer, no. 821 (hb. Gr., and hb. U. S. Nat. Mus.). The affinity of this species is with *A. Wislizeni*, Gray, but the leaves are more or less pinnatifid, the pubescence in general is less spreading, the involucre bracts are purplish, and the pappus is much more reduced. Intermediate forms between *A. Wislizeni* and *A. griseus* may be found, but until such are known to occur it seems best to regard them as distinct species.

Achaetogeron purpurascens, Greenm. Proc. Am. Acad. xxxix. 94 (1903). By typographical error the generic name was here published as "*Archaetogeron*." It may be noted here, that specimens of this species were also secured from its original station, near Colonia Garcia in the Sierra Madre, State of Chihuahua, by *E. W. Nelson*, 1 to 20 August, 1899, no. 6213 (hb. Gr., and hb. U. S. Nat. Mus.).

Achaetogeron versicolor, n. sp. An herbaceous annual or sometimes indurated at the base and thus becoming perennial, 1.5 to 3 dm. high: stems much-branched from the base, erect or ascending, pubescent with spreading hirsute hairs: leaves alternate, sessile, linear-lanceolate to oblanceolate-spatulate, 8 to 18 mm. long, 1 to 6 mm. broad, acute, entire to 3-5-toothed, hirsute-pubescent: peduncles slender, 6 cm. or less in length, upwardly enlarged just beneath the head, pubescent with horizontally spreading hairs: heads including the fully expanded rays about 12 mm. in diameter: involucre campanulate, about 4 mm. high; bracts of the involucre biseriata, lanceolate to lance-ovate, acute, scarious-tipped and with thin margins, hirsute-pubescent, purplish: ray-flowers in about 3 rows, numerous, fertile; rays 4 to 5 mm. long, half a millimetre wide, white or whitish at the base, tipped with color varying from magenta to dark purple: disk-flowers many: pappus of both ray- and disk-flowers a minute inconspicuously fringed crown: mature achenes laterally compressed, about 1 mm. long, sparingly pubescent to essentially glabrous. — MEXICO. State of Hidalgo: meadows near Buena Vista Station, altitude 2530 m., 7 August, 1904, *C. G. Pringle*, no. 8849 (hb. Gr.).

Erigeron alcornutus, n. sp. Annual: stem erect, simple and purplish below, branched and green above, striate, pubescent with long spreading or slightly reflexed jointed hairs: leaves sessile, semiamplexicaul, auriculate, oblong-lanceolate, 2 to 6.5 cm. long, 0.5 to 3 cm. broad, deeply lacinate-toothed in the terminal half with diverging teeth or divisions, hirsute on both surfaces: heads subcorymbosely disposed on naked or bracteate peduncles, including the rays 2.5 to 3 cm. in diameter: involucre campanulate; bracts of the involucre narrowly lance-attenuate, in 2 (3) series, hirsute-villous with some glandular hairs intermixed: rays white, many (180-200) nearly 1 cm. long, less than 1 mm. wide: disk-flowers many: pappus of both ray- and disk-flowers in a single series consisting of few slender setae, 1 to 2 mm. in length, very caducous: mature achenes about 1 mm. long, glabrous. — MEXICO. State of Chihuahua: on alluviums of Arroyo Auco, Sierra Madre, 15 October, 1887, *C. G. Pringle*, no. 1273 (hb. Gr.).

Mr. Pringle's plant was originally referred to *Achaetogeron Seemannii*,

Gray (*Erigeron Seemannii*, Greene), from which, however, it differs in the character of the foliage, the number of ray-flowers, and in other technical characters of the head. *E. alaicornutus* has the leaves relatively broad at the base, and this breadth is retained up to the point of laciniation, not gradually narrowed to a subamplexicaul base. Moreover, the rays are more numerous, longer and narrower than in the Seemann plant, and the achenes again are smaller and quite glabrous. On account of the simple setose pappus with comparatively few setae Mr. Pringle's plant above cited seems to the writer best referred to *Erigeron*, related to *E. neo-mexicanus*, Gray, and *E. delphinifolius*, Willd.

Erigeron calcicola, n. sp. Suffrutescent: stems several from a stout ligneous base, erect or nearly so, 1.5 to 3 dm. high, usually branched, pubescent with short spreading or slightly reflexed somewhat crisp hairs: leaves spatulate to linear, 0.5 to 2.5 cm. long, 1 to 5 mm. broad, acute or obtusish, entire or the lower ones few-toothed, pubescent on both surfaces: peduncles 10 cm. or less in length, hirtellous-hirsute with short spreading or somewhat reflexed hairs: heads 6 to 9 mm. high, including the rays 1.5 to 2 cm. in diameter: involucre campanulate, a little shorter than the flowers of the disk: bracts of the involucre lanceolate, acute, more or less scarious-margined, hirtellous-hirsute: ray-flowers numerous, sub-biseriate; rays narrow, white or faintly tinged with purple: disk-flowers many: pappus double, consisting of long slender setae and of short laciniate squamellae, similar in both disk- and ray-flowers but somewhat shorter in the latter: mature achenes 1 to 1.5 mm. long, pubescent under a lens. — MEXICO. State of Hidalgo: calcareous bluffs near Tula, altitude 2070 m., 11 September, 1899, *C. G. Pringle*, no. 8223 (hb. Gr.); chalk bluffs, altitude 2070 m., 16 September, 1902, *C. G. Pringle*, no. 9899 (hb. Gr.). State of San Luis Potosi: 22° N. Lat., altitude 1800–2400 m., *Parry & Palmer*, no. 391 (hb. Gr.). State of Coahuila: Saltillo, 15–30 April, 1898, *Dr. Edward Palmer*, no. 20 (hb. Gr.).

E. calcicola resembles *E. pubescens*, HBK. (*E. Ervendbergii*, Gray), but differs in having a stouter more distinctly ligneous base, and a spreading or somewhat reflexed pubescence on the stem and peduncles not upwardly appressed or strigillose.

Erigeron morelensis, n. sp. Perennial: stem scapiform, slender, more or less flexuous, 1.5 to 2.5 dm. in length, bearing 3 to 5 linear acute bracts between the leafy base and the solitary terminal head, striate, green or slightly purplish, sparingly pubescent: leaves at the base of the stem crowning the oblique rootstock, petiolate, lanceolate to somewhat

obovate-lanceolate, including the petiole 3 to 10 cm. in length, 0.5 to 2 cm. broad, acuminate, acute, remotely and rather coarsely mucronate-dentate, gradually narrowed at the base into the slender petiole, dark green and pubescent above with scattered hirsute hairs, paler and glabrous beneath; petioles reddish-purple, usually as long as or sometimes exceeding the blade: heads 6 to 8 mm. high, including the rays 1.5 to 2 cm. in diameter: involucre campanulate, about as high as the flowers of the disk; bracts of the involucre 2-3-seriate, subequal, lanceolate, acute, pubescent with a few jointed hairs: ray-flowers 60 to 70, in 2 series; rays white or tinged with magenta, 2-3-dentate: pappus of both ray- and disk-flowers alike, consisting of a single series of numerous slender setae: mature achenes about 1 mm. long, nearly or quite glabrous. — MEXICO. State of Morelos: wet cliffs, mountain cañon near Cuernavaca, altitude 1980 m., 15 May, 1898, *C. G. Pringle*, no. 7668 (hb. Gr.).

Erigeron oaxacanus, n. sp. A low herbaceous perennial: stems several from a common base, ascending or suberect, simple or branched, about 1 dm. high, hirsute-pubescent: leaves oblanceolate to lance-linear, 0.5 to 1.5 cm. long, 1 to 4 mm. broad, incised-serrate with 3 to 7 teeth to entire, subappressed-hirsute-pubescent on both surfaces; the lowermost leaves narrowed to a subpetiolate base, the upper sessile: peduncles terminating the stems and branches, 4 cm. or less in length, slender, pubescent: heads excluding the rays 6 to 8 mm. in diameter: involucre campanulate; bracts of the involucre narrowly lance-attenuate, hirsute-pubescent: ray-flowers 2-3-seriate, 80 to 85; rays white, twice as long as the involucre: disk-flowers numerous: pappus of both ray- and disk-flowers biseriate; the outer series of fimbriated scales, the inner of numerous slender setae: achenes pubescent. — MEXICO. State of Oaxaca: near San Mateo del Mar, 16 May, 1895, *E. W. Nelson*, no. 2606 (hb. Gr., and hb. U. S. Nat. Mus.).

Erigeron oreophilus, n. sp. Perennial: stems erect from a lignous base, 3 to 8 dm. high, branched above, green or purplish, striate, glandular-puberulent and sparingly hirsute with scattered horizontally spreading hairs: leaves mostly pinnatifid, 1.5 to 8 cm. long, 4 cm. or less broad, glandular-puberulent and sparingly hirsute; divisions linear or linear-oblong, acute or obtuse, entire; the broad petiole-like base of the leaves usually rather conspicuously ciliate; the uppermost leaves undivided, linear-lanceolate and entire: inflorescence a terminal corymbose cyme: heads including the rays 2.5 to 3 cm. in diameter: involucre campanulate, about 6 mm. high; bracts of the involucre linear, attenuate, somewhat scarious-tipped and more or less purplish, glandular-puberulent

or somewhat atomiferous-glandular with a few scattered spreading stiffish hairs intermixed: ray-flowers numerous, 2- (3-) seriate; rays white: disk-flowers many: pappus of both ray- and disk-flowers alike, double; the inner of slender deciduous setae, the outer of short laciniate squamellae: mature achenes about 1 mm. long, laterally compressed, pubescent. — MEXICO. State of Chihuahua: southwestern part of the state, August to November, 1885, *Dr. Edward Palmer*, no. 419 (hb. Gr.); dry ledges of La Bufa Mt. above Cusihiuriachic, altitude 2375 m., 31 August, 1887, *C. G. Pringle*, no. 1271 (hb. Gr.); cool slopes, foothills of the Sierra Madre, 11 October, 1887, *C. G. Pringle*, no. 1272 (hb. Gr.); near Colonia Garcia in the Sierra Madre, 1-20 August, 1899, *E. W. Nelson*, no. 6218 (hb. Gr., and hb. U. S. Nat. Mus.); between Colonia Garcia and Pratt's Ranch below Pacheco, 20-24 August, 1899, *E. W. Nelson*, no. 6265 (hb. Gr., and hb. U. S. Nat. Mus.); near Colonia Garcia in the Sierra Madre, altitude 2255 m., 4 September, 1899, *Townsend & Barber*, nos. 305, 306, (hb. Gr.). — UNITED STATES. Arizona: Mt. Graham, altitude 2740 m., September, 1874, *Dr. J. T. Rothrock*, no. 731 (hb. Gr.); Ft. Whipple, 1865, *Coues & Palmer*, no. 421 (hb. Gr.).

Forma tenuilobus, n. form. Stems and leaves very sparingly pubescent; division of the leaf linear, elongated even 3 cm. in length, 2 mm. or less in breadth. — MEXICO. State of Sinaloa: Sierra de Choix, 15 October, 1898, *E. A. Goldman*, no. 255 (hb. Gr., and hb. U. S. Nat. Mus.).

Forma latilobus, n. form. Stem and leaves copiously glandular-puberulent; divisions of the leaf linear-oblong, obtusish, 3 cm. or less in length, 2 to 5 mm. in breadth. — MEXICO. State of Chihuahua: base of Mt. Mohinora, 12.8 km. from Guadalupe y Calvo, altitude 2130 to 2285 m., 23-31 August, 1898, *E. W. Nelson*, no. 4861 (hb. Gr., and hb. U. S. Nat. Mus.).

Var. dactyloides, n. var. Leaves lance-oblong, 2 to 7.5 cm. long, 0.3 to 2.5 cm. broad, laciniate-lobed in the upper portion with 3 to 7 slightly divaricating lance-linear acute lobes 12 mm. or less in length, the lower two-thirds of the leaf-blade of nearly uniform breadth, 5 to 12 mm. broad, entire: rays white or roseate-tinged in the young stage. — MEXICO. State of Chihuahua: near Colonia Garcia in the Sierra Madre, 1-20 August, 1899, *E. W. Nelson*, no. 6220 (hb. Gr., and hb. U. S. Nat. Mus.). The variety connects directly with typical forms of the species through *Townsend & Barber's* no. 305, and *Pringle's* no. 1272.

E. oreophilus is closely related to *E. delphinifolius*, Willd., and to *E. neo-mexicanus*, Gray, and has been confused with both of these species.

From the former it differs in having horizontally spreading hirsute hairs on the stems, and in being glandular-puberulent; from the latter it differs in being glandular-puberulent or at least atomiferous-glandular, and in having heads averaging fully one-third larger not only in the length of the ray-flowers but in the longer involucre bracts, etc.

ERIGERON REPENS, Gray, var. *psammophilus*, n. var. Stem slender, somewhat flexuous, sparingly pubescent: leaves glabrous or inconspicuously pubescent: other characters of the species. — MEXICO. State of Vera Cruz: Lizardo, *Dr. Wawra*, no. 276 (hb. Berlin, and hb. Gr.). Mr. C. G. Pringle's no. 9673 collected on sand dunes near the City of Vera Cruz, and noted in the Proceedings of the American Academy xxxix, 95, 1903, forms a good intermediate between the type of the above species and the variety here described.

Baccharis Palmeri, n. sp. Suffruticose: stems one to several from a ligneous base, erect, 2 to 3 dm. high, striate-angled or furrowed, glabrous, glandular-viscid: leaves sessile, lanceolate to oblanceolate, 7 to 28 mm. long, 1 to 8 mm. broad, acute, entire, glabrous, punctate and glandular-viscid, uninerviate or with 2 lateral inconspicuous nerves: inflorescence corymbose or corymbose-paniculate: heads 3 to 5 at the ends of the branches on rather short peduncles: heads of the staminate flowers 8 to 10 mm. high, 11–13-flowered; involucre bracts in 3 to 4 series, lanceolate, 3 to 7 mm. long, acute, the outer greenish glandular and shorter than the inner almost colorless ones: heads of the pistillate flowers 1 to 1.5 cm. high, 15–18-flowered; bracts of the narrowly campanulate involucre 3–4-seriate, elliptic-lanceolate to lanceolate, 2 to 6 mm. long, the outer greenish, glandular-viscid, obtuse and shorter than the pale almost colorless or subhyaline inner acute ones: mature achenes 2 mm. long, striate, glabrous, bearing the rather persistent pappus, the latter 10 to 12 mm. in length. — MEXICO. State of Durango: vicinity of the city of Durango, April to November, 1896, *Dr. Edward Palmer*, no. 801 (hb. Gr., and hb. Berlin) staminate plant, and no. 802 (hb. Gr.) pistillate plant. The species is related to *B. Seemanni*, Gray, which it superficially resembles, but differs in having shorter peduncles, more numerous heads, and a fewer-seriated involucre.

Baccharis Pringlei, n. sp. Stem striate, purplish, pubescent with crisp hairs; internodes 5 to 6 cm. in length: leaves alternate, sessile, ovate, acuminate, 4 to 12 cm. long, 2 to 5.5 cm. broad, abruptly narrowed below the middle to about 1.5 cm. in breadth, amplexicaul, mucronate-acute, subsinnate-dentate and the teeth terminated by a mucro, ciliate, hirsute-pubescent above, paler and pubescent on the midrib and

lateral veins beneath: inflorescence a terminal leafy hirsute-pubescent many-headed panicle; peduncles 6 mm. or less in length, slender; bracts of the ultimate inflorescences lanceolate to subsetaceous; heads of the staminate flowers about 5 mm. high and broad, about 25-flowered: involucre campanulate, 3-seriate; bracts of the involucre lanceolate, purplish, the outer acute, the inner longer, obtuse, and more or less scarious on the margins and at the tip: pistillate flowers unknown. — MEXICO. State of Oaxaca: in wet ravines, Sierra de San Felipe, altitude 2285 m., 11 December, 1895, *C. G. Pringle*, no. 7014 (hb. Gr.).

In foliar characters *B. Pringlei* suggests *B. oaxacana*, Greenm., from which, however, it is easily distinguished by its larger acuminate leaves, many-headed paniculate inflorescence, smaller heads, and finally by the absence of glandular hairs on the stem and in the inflorescence.

Melampodium Nelsonii, n. sp. Perennial: stems ascending or erect, much-branched, hirsute-pubescent: leaves sessile, linear-lanceolate, 1.5 to 5 cm. long, 1 to 4 mm. broad, entire and undivided or pinnately 3-cleft into linear divaricately spreading divisions, pubescent above, densely sericeous-villous beneath, revolute-margined: peduncles rather slender, 1 to 8 cm. in length, pubescent with spreading hairs: heads including the conspicuous orange-yellow rays 1 to 1.5 cm. in diameter: outer involucre bracts herbaceous, ovate-deltoid, gradually narrowed to an acute apex, densely hirsute-pubescent: ray-flowers about 12; rays oblong, 5 to 6 mm. long, 3 mm. broad: fruit somewhat quadrangular in cross-section, ribbed on the sides, and more or less tuberculate; the hood conspicuously developed and usually prolonged into a spirally coiled puberulent appendage. — MEXICO. State of Michoacan: Volcano of Jorullo, 28 March, 1903, *E. W. Nelson*, no. 6939 (hb. Gr., and hb. U. S. Nat. Mus.).

The fruit characters place *M. Nelsonii* in the § *Eumelampodium* near *M. longipes*, Rob., from which species, however, Mr. Nelson's plant is readily separated by the distinctly ligneous stem, more numerous ray-flowers, longer rays, and a ribbed fruit. In habit *M. Nelsonii* assimilates *M. heterophyllum*, Lag., but differs in having a well-developed hood with an attenuated coiled appendage, narrower leaves, and a more densely pubescent upper leaf-surface.

SANVITALIOPSIS, Schz. Bip. Among Liebmann's plants of Mexico is one which was determined by Schultz Bipontinus as "*Sanvitaliopsis Liebmanii*." The earliest reference to *Sanvitaliopsis* appears in Benth and Hooker's *Genera Plantarum*, where it is mentioned under *Zinnia* with the following brief characterization: "*Sanvitaliopsis*, Schz. Bip. in Pl. Liebm. est species habitu *Heliopsidis*, acheniis tamen 2-aria-

tis *Zinniae*." The first adequate description and publication of the name was in 1887, when Klatt published a careful diagnosis of the Liebmann plant under *Zinnia Liebmannii*, Benth. & Hook. f., citing *Sanvitaliopsis Liebmannii*, Schz. Bip., as a synonym. On this description of Klatt the genus *Sanvitaliopsis* must rest.

The essential characters of the plant in question are such that it does not seem to the writer to have been correctly referred to *Zinnia* where Bentham and Hooker, f., placed it. The narrow attenuated bracts of the involucre, the uncinat-tipped pales, as well as the habit are all greatly at variance with *Zinnia*; indeed these differences are so well marked that our only course is to accept *Sanvitaliopsis* to generic rank, as a member of the subtribe *Zinnieae*. The recently described *Grypocarpa*, Greenm., is unquestionably congeneric with *Sanvitaliopsis*, but represents a second species of the Schultz Bipontinus genus. The complete synonymy with citation of specimens may be given as follows:—

SANVITALIOPSIS, Schz. Bip. in Benth. & Hook. f. Gen. Pl. ii. 357 (1873), and in Leopoldina xxiii. 89 (1887), reprint p. 2 in synonymy. *Grypocarpa*, Greenm. Trees & Shrubs, i. 145, t. 73 (1903).

S. LIEBMANNII, Schz. Bip. in Leopoldina, l. c. *Zinnia Liebmannii*, Benth. & Hook. f. Leopoldina, l. c.; Rob. & Greenm. Proc. Am. Acad. xxxii. 19 (1896). — MEXICO. Rio Taba, *Liebmann*, no. 552 (hb. Copenhagen, and hb. Gr.).

S. Nelsonii, n. comb. *Grypocarpa Nelsonii*, Greenm. Trees & Shrubs, l. c. — MEXICO. State of Chiapas: top of ridge back of Tonalá, *Nelson*, no. 2892 (hb. Gr., and hb. U. S. Nat. Mus.).

Rumfordia floribunda, DC. Prodr. v. 550 (1836); Deless. Ic. Sel. 4. t. 30 (involucre poorly represented); Hemsley, Biol. Cent.-Am. Bot. ii. 157. Typical forms of this species are now represented in the Gray Herbarium by the following collections: MEXICO. State of Oaxaca: without further locality, *Ghiesbreght*. State of Morelos: on mountain-side about Parque Station, 2130 m., 26 November, 1902, *Pringle*, no. 9955. State of Michoacan: mountains near Patzcuaro, 26 November, 1891, *Pringle*, no. 3940; north slope of Mt. Patambau, altitude 3150 m., 28–31 January, 1903, *Nelson*, no. 6570; north slope of Mt. Taucilaro, altitude 2590 to 3200 m., 24 February, 1903, *Nelson*, no. 6889. State of Jalisco: mountains near Talpa, altitude 1340 to 1525 m., 7 March, 1897, *Nelson*, no. 4024; near Compostela, altitude 915 to 1830 m., 7–8 April, 1897, *Nelson*, no. 4172.

Forma pubescens, n. form. Similar to the species in every way except that the leaves are tawny pubescent on the under surface. —

MEXICO. State of Oaxaca: Cerro de San Felipe, altitude 2440 m., 29 November, 1895, *C. Conzatti*, no. 30 (hb. Gr.).

Sabazia (?) *anomala*, n. sp. Annual, 3 to 4.5 dm. high: stem dichotomously branched from near the base, pale green or purplish, hirsute-pubescent with glandular hairs intermixed: leaves opposite, sessile, ovate-lanceolate, 2 to 5 cm. long, 7 to 22 mm. broad, acute, remotely and coarsely sinuate-dentate, cuneate to slightly rounded at the base, pale green and hirsute-pubescent on both surfaces, 3-nerved from near the base: peduncles terminating the stem and branches, 7 cm. or less in length, hirsute-pubescent with glandular hairs intermixed: heads including the fully expanded rays about 1.5 cm. in diameter: involucre campanulate, 1-2-seriate; bracts of the involucre ovate to lance-ovate, 4 to 5 mm. long, acute or obtuse, herbaceous or somewhat tinged with purple: receptacle conical, paleaceous; pales narrow, trifid: ray-flowers 8, fertile; rays white or roseate, obtusely 3-dentate: disk-flowers numerous; corollas yellow: pappus of both ray- and disk-flowers of 10 obovate or narrowly oblong ciliate-fringed persistent scales, half as long as the achenes: mature achenes subterete, 1.5 mm. long, striate, rather sparingly pubescent. — MEXICO. State of Hidalgo: rocky mesas near Buena Vista Station, altitude 2530 m., 7 August, 1904, *C. G. Pringle*, no. 8853 (hb. Gr.).

This species is placed doubtfully in the genus *Sabazia*, because of the presence of a scaly pappus. In every other regard the plant is truly congeneric, having a habit closely assimilating *S. humilis*, Cass., from which it differs not only in the presence of a pappus but in the pubescent shorter achenes. There is a superficial resemblance between *Sabazia anomala* and *Tridax trilobata*, Hemsl.; it is, however, a similarity in habit and foliage rather than in technical or essential characters.

PERYMENIUM BUPHTHALMOIDES,* DC. Prodr. v. 609 (1836); Hemsl. Biol. Cent.-Am. Bot. ii. 181; Rob. & Greenm. Proc. Am. Acad. xxxiv. 523, in part. *P. Cervantesii*, Hemsl. l. c., at least as to *Bourgeau*, no. 378 (hb. Gr.); Rob. & Greenm. l. c.; not DC. — MEXICO. *Alaman* (hb. DC., tracing of type in hb. Gr.). Federal District: hills above

* Since the revision of this genus by Robinson and Greenman (Proc. Am. Acad. xxxiv. 521-529, 1899) types of several of the earlier species have been examined in the De Candolle herbarium by Dr. Robinson, and additional information was obtained concerning their identity, especially that of *P. buphtalmoides*, DC., which has been much confused with *P. Cervantesii*, DC. The above synonymy and the specimens cited it is hoped may help to clear up the confusion of these two species.

Santa Fé, altitude 3000 m., *Pringle*, no. 9322 (hb. Gr.); *Bourgeau*, no. 378 (hb. Gr.). State of Mexico: Flor de Maria, *Pringle*, no. 3169 (hb. Gr.). State of Jalisco: granitic hills near Guadalajara, *Pringle*, no. 8624 (hb. Gr.).

P. CERVANTESII, DC. l. c. — MEXICO. *Alaman* (hb. DC., photograph of type in hb. Gr.). State of Mexico: rocky hills, Lecheria, Valley of Mexico, 21 km. north of the City of Mexico, altitude 2285 m., 4 July, 1904, *C. G. Pringle*, no. 8816 (hb. Gr.). Mr. Pringle states that this species grows from 9 to 12 dm. in height.

P. flexuosum, n. sp. An herbaceous perennial: stems decumbent or ascending from a ligneous base, slender, flexuous, 1.5 to 6 dm. in length, green or purplish, striate, pubescent with appressed or somewhat spreading stiffish hairs: leaves opposite, sessile or nearly so, ovate to lanceolate, 1.5 to 4.5 cm. long, 0.5 to 2.2 cm. broad, acute, dentate, usually abruptly contracted at the base sometimes to a very short petiole, hirsute-hispid on both sides especially on the midrib and nerves beneath, intermixed on the surface with shorter finer strigillose hairs, 3-7-nerved from or just above the base: heads solitary, including the rays 2 to 3 cm. in diameter, borne on long naked peduncles terminating the stem: peduncles 4 to 8 cm. in length, densely subappressed-canous-pubescent towards the head: involucre subuniseriate; bracts of the involucre lanceolate to lance-oblong, obtuse or obtusish, hirsute with spreading hairs: ray-flowers about 8; rays oblong, including the short tubular portion about 1 cm. long, 4 to 5 mm. broad, yellow: pales of the receptacle often purplish-tipped: disk-flowers about equalling or slightly exceeding the involucre: pappus of both ray- and disk-flowers much reduced, consisting of a few very minute setae and a single long awn or seta borne on the inner or posterior angle of the achene: achenes slightly pubescent above. — *P. buphthalmoides*, Rob. & Greenm. Proc. Am. Acad. xxxiv. 523 (1899), not DC. — MEXICO. Federal District: Serrania de Ajusco, altitude 3000 m., 9 July, 1898, *C. G. Pringle*, no. 7636 (hb. Gr.).

This species differs from *P. buphthalmoides*, DC., in having lanceolate to ovate rather than elliptic-lanceolate leaves, and the same are as a rule more numerous dentate and less conspicuously nerved; the pubescence on the involucre is of spreading not appressed hairs; and the pappus is much more reduced.

Bidens Pringlei, n. sp. Perennial: stems ascending from a ligneous base, 3 to 4.5 dm. in length, green or slightly purplish, nearly or quite glabrous below, pubescent above with short canous subappressed or somewhat spreading hairs: leaves, except the uppermost, petiolate, bi-tripin-

natisect, 2 to 6 cm. long, 1 to 4 cm. broad, glabrous; divisions linear, acute: peduncles long, slender, 1.5 dm. or less in length, naked, sub-appressed-canescence-pubescent: heads few, including the fully expanded rays 2.5 to 3 cm. in diameter: involucre campanulate, 5 to 6 mm. high; outer bracts of the involucre about 15, linear, acute, equalling or slightly exceeding the inner ones, canous-pubescent, the inner bracts oblong-lanceolate, obtuse, pubescent along the median line, scarious-margined: ray-flowers 8 to 10, neutral; rays whitish or roseate: disk-flowers yellow, numerous, 45 to 50; mature achenes linear, about 1 cm. long, hirsute-hispid above, bearing 2 or 3 rather short retrorsely barbed awns 2 mm. or less in length. — MEXICO. State of Michoacan: fields near Uruapan, altitude 1525 m., 8 October, 1904, *C. G. Pringle*, no. 8814 (hb. Gr.).

BIDENS ROSEA, Schz. Bip. in Seem. Bot. Herald, 308 (1852-57). *Cosmos pilosus*, HBK. Nov. Gen. & Sp. iv. 241 (1824); Hemsl. Biol. Cent.-Am. Bot. ii. 200 (1884). Although the Humboldt and Bonpland specimen on which this species was based has not been examined by the writer, yet there are in the Gray Herbarium several specimens which correspond fairly well with the original description. The mature achenes in the material at hand are elongated, as in many species of *Bidens*, but not attenuated above into a beak as in *Cosmos*, hence the disposition of the plant as made by Schultz Bipontinus is here maintained. The following collections are taken to represent the above species: MEXICO. State of San Luis Potosi: Alvarez, 28 September to 3 October, 1902, *Palmer*, no. 192 (hb. Gr.). State of Michoacan: Los Reyes, 8 to 12 February, 1903, *E. W. Nelson*, no. 6868 (hb. Gr., and hb. U. S. Nat. Mus.). GUATEMALA, Department of Santa Rosa: Cuijiniquilapa, altitude 800 m., *Heyde & Lux*, no. 6172 (hb. Gr.).

Var. *calcicola*, n. var. Leaves more divided; divisions lanceolate: involucre rather densely canous-pubescent. — MEXICO. State of Morelos: on limestone hills, Yantepec, near Cuernavaca, altitude 1220 m., 21 October, 1902, *C. G. Pringle*, no. 11,340 (hb. Gr.).

Bidens sarmentosa, n. sp. A low almost prostrate herbaceous perennial: stems freely branched, 1.5 dm. or less in length, glabrous or bearing a few scattered hairs: leaves petiolate, bipinnate, 1 to 1.5 cm. long, two-thirds as broad, glabrous on both surfaces; segments obtuse or obtusish: heads small, 5 to 7 mm. high, about 1 cm. in diameter including the rays, borne on glabrous or essentially glabrous peduncles 4.5 cm. or less in length: involucre double, the outer bracts usually 5, linear or linear-spatulate, obtusish, glabrous, sometimes ciliate-margined,

spreading or subreflexed, inner involucre bracts lanceolate to lance-oblong, obtuse: ray-flowers 5 to 6, sterile; rays short-oblong, 4 to 5 mm. long, nearly as broad, orange-yellow: disk-flowers about 20: mature achenes linear, 2 to 6 mm. long, glabrous or sparingly hispidulous, awnless or with reduced awns. — MEXICO. Federal District: Serrania de Ajusco, Ajusco Station, altitude 2895 m., 9 November, 1903, C. G. Pringle, no. 11,486 (hb. Gr.) This plant was distributed as "*Bidens ferulaefolia*, DC.," but the prostrate habit, the small leaves and heads, and the short rays amply distinguish it from that species.

BIDENS SEEMANNII, Schz. Bip. in Seem. Bot. Herald, 307 (1852-57); Hemsl. Biol. Cent.-Am. Bot. ii. 203, as to plant of Seemann, not of Parry and Palmer. *B. Seemanni*, Gray, Proc. Am. Acad. xix. 16. *Cosmos Seemanni*, Gray, l. c. This species has been referred both to *Bidens* and to *Cosmos*. The mature achenes are linear, elongated, 13 mm. or less in length and nearly of the same diameter throughout, but not attenuated above into a beak as in true *Cosmos*. Certainly if the two genera are to be kept separate the above species must be retained in the genus *Bidens*, where it was originally placed by Schultz Bipontinus. Besides the original specimen collected by Seemann, fragments of which are in the Gray Herbarium, and the Ghiesbreght plant cited by Dr. Gray in the paper referred to above, there are now at hand excellent specimens collected by Mr. C. G. Pringle in fields, near Uruapan, State of Michoacan, altitude 1525 m., 8 October, 1904, no. 8845 (hb. Gr.). The finely divided pinnatisect leaves, the deep purple rays, and the long linear smooth-bodied usually 6-awned achenes render this species one of the most striking and easily recognized of the entire genus.

Cosmos ocellatus, n. sp. Annual: stem erect or ascending, simple or branched, 3 to 5 dm. high, more or less pubescent with crisp jointed hairs: leaves opposite, petiolate, 2 to 8 cm. long including the petiole, 1.5 to 4 cm. broad, bi-tripinnately parted, dark green above, pale beneath, subappressed-pubescent on both surfaces; segments lanceolate or lance-linear, acute; petioles 0.5 to 4 cm. long, pubescent: heads 1.2 to 2 cm. high, including the rays 3 to 4 cm. in diameter, borne on long naked striate somewhat pubescent peduncles 1 to 2 dm. in length: involucre double, the outer bracts subfoliaceous, linear or lance-linear, callous-tipped, 8 to 10 mm. long, densely pubescent with long jointed somewhat interwoven hairs; inner involucre bracts narrowly elliptic-ovate, acutish, yellowish-brown in color, scarious-margined: ray-flowers about 8, sterile; rays obovate-oblong, 1.5 cm. long, two-thirds as broad, notched with a broad truncated notch, orange-yellow, usually with a

reddish-brown or chocolate-colored eye near the base: pales of the receptacle tipped with black: disk-flowers numerous; mature achenes about 1.5 cm. in length, attenuated above into a long slender beak, glabrous towards the base, pubescent above.—MEXICO. State of Guerrero: thin soil of the knobs of the Sierra de Tepoxtlán, altitude 2285 m., 4 October, 1900, *C. G. Pringle*, no. 8386 (hb. Gr.), distributed under the name "*Bidens daucifolia*, DC."

A portion of the type-number of De Candolle's species is in the Gray Herbarium, and a careful comparison of Mr. Pringle's plant with it shows the two to be rather remotely related. The larger heads, the broader deeply notched bicolorous rays readily separate the Pringle plant from *Bidens daucifolia*, DC.; and moreover its distinctly long-attenuated or beaked achenes place it in the genus *Cosmos*.

Eutetras Pringlei, n. sp. An herbaceous perennial, more or less glandular pubescent throughout: stems erect or ascending, 1.5 to 3 dm. or more in length, often with tufts of white hairs in the leaf-axils: leaves opposite, petiolate, deltoid-ovate, 1 to 4.5 cm. long, 1 to 4 cm. broad, acute, irregularly and rather coarsely sinuate-dentate, dark green, 3-nerved from the cordate base, the lateral nerves again branching; petioles 0.5 to 3 cm. in length, canaliculate above: inflorescence a few-headed corymbose cyme; peduncles 2 to 5 cm. long, upwardly enlarged just below the involucre: heads about 12 mm. high, including the fully expanded rays 2.5 to 3 cm. in diameter: involucre broadly campanulate, a little shorter than the flowers of the disk; bracts of the involucre uniseriate, linear-lanceolate, acuminate, about 1 cm. long, acute: ray-flowers 12 to 15, fertile; corolla-tube 3.5 mm. long, stipitate-glandular; rays oblong, 10 to 12 mm. long, 4 to 5 mm. broad, 3-dentate, white: disk-flowers numerous; corollas tubular, 7 mm. long, 4-dentate: anthers conspicuously appendaged with oblong appendages: pappus of both ray- and disk-flowers of 4 short lacerated scales alternating with an equal number of slender setae, persistent: mature achenes 3.5 mm. long, pubescent along the angles, nearly or quite glabrous on the four faces.—MEXICO. State of Guanajuato: about basaltic cliffs, near Acámbaro, 6 October 1904, *C. G. Pringle*, no. 8813 (hb. Gr.).

This genus has been known hitherto only through *E. Palmeri*, published by Dr. Gray in 1880. The discovery of a second species is noteworthy, especially as the plant was found in a region quite remote from Dr. Palmer's locality. *E. Pringlei* exhibits perfectly the general characters ascribed to the genus by Dr. Gray, and it is readily distinguished from *E. Palmeri* by being larger throughout, and of a less caespitose habit.

SENECIO ALBONERVIUS, Greenm. Shrub, 2 to 3 m. high: stem in the younger parts white-tomentose, later becoming glabrous and covered with a grayish bark: leaves petiolate, broadly ovate, cordate, 3 to 12 cm. long, nearly or quite as broad, palmately nerved, 5-9-angulately lobed, at first tomentulose on both surfaces, later more or less glabrate and discolorous, persistently white-tomentulose on the nerves especially of the upper surface, short mucronate-denticulate on the margins; lobes short-mucronate-acute: inflorescence a terminal many-headed corymbose panicle: heads 10 to 12 mm. high, radiate; involucre calyculate with short triangular-lanceolate acute bracteoles; bracts of the involucre usually 8, lance-linear to oblong, obtuse, about 6 mm. long, thickened along the median line, glabrous or slightly tomentulose-puberulent, the inner with broad scarious margins: ray-flowers commonly 5; pappus surpassing the tube; rays 4-nerved: disk-flowers 8 to 10: achenes glabrous. — Monogr. Senecio, 26 (1901) & Engl. Bot. Jahrb. xxxii. 22 (1902). — MEXICO. State of Mexico: Tamascaltepec, *Schiede*, coll. of 1831 (hb. Gr., and hb. Mus. Bot. Berol.); Mt. Ixtaccihuatl, altitude 2440-3350 m., 1903, *C. A. Purpus*, no. 201 (hb. Gr., hb. T. S. Brandegee). State of Michoacan: north slope of Mt. Tancitaro, altitude 2285-3200 m., 24 February, 1903, *E. W. Nelson*, no. 6904 (hb. U. S. Nat. Mus., and hb. Gr.). State of Morelos: Sierra de Tres Marias, altitude 3050 m., 15 April, 1904, *C. G. Pringle*, no. 8903 (hb. Gr.). State of Vera Cruz: Mineral del Monte, *Ehrenberg*, no. 324 (hb. Gr., and hb. Mus. Bot. Berol.).

SENECIO BRACTEATUS, Klatt. Leopoldina, xxiv. 125 (1888), reprint p. 7. *S. leucanthus*, Greenm. Monogr. Senecio, 25 (1901) & Engl. Bot. Jahrb. xxxii (1902). *Cacalia amplexicaulis*, Schz. Bip., acc. to Klatt, l. c., reprint p. 8. I am indebted to Professor Eug. Warming of Copenhagen for a critical comparison of Mr. Pringle's no. 5713 with Liebmann's no. 192, the original of *S. bracteatus*, Klatt (*Cacalia amplexicaulis*, Schz. Bip.). There can be no doubt of the identity of the two plants, although the Liebmann specimen is said to be rather incomplete. — MEXICO. Between St. Andres and St. Miguel, *Liebmann*, no. 192 (hb. Copenhagen, fragment and drawing ex herb. Klatt in hb. Gr.). State of Oaxaca: Sierra de San Felipe, altitude 3050 m., 19 September 1894, *Pringle*, no. 5713 (hb. Gr.).

Cirsium pinetorum, n. sp. Stem 1 to 2 m. high with a few widely spreading branches above, striate, tawny arachnoid-tomentose: leaves pinnatifid, lanceolate-oblong in general outline, acuminate, the lower 3 to 4 dm. long, 1 to 1.5 dm. broad, the upper gradually smaller and sessile but not decurrent on the stem, spinose-margined, hirsute-hispid

above, densely white-tomentose beneath; the terminal and lateral segments prolonged into a stoutish straw-colored spine: heads solitary, terminating the stem and branches, large: involucre 5 to 6 cm. high; bracts of the involucre disposed in many series, essentially uniform, narrowly lance-attenuate, 2.5 to 5 cm. in length, spiny tipped, entire or sparingly spinose-margined, somewhat glabrate on the back, deep purple in color, the outer successively shorter: flowers apparently white or slightly purplish: mature achenes oblong, 5 to 6 mm. long, glabrous. — MEXICO. State of Puebla: in pine forests, Honey Station, altitude 1765 m., 15 September, 1904, *C. G. Pringle*, no. 8884 (hb. Gr.).

This species is one of the most showy of the genus and is easily recognized among all known American species on account of the very large heads, the narrow lance-attenuated deep purple essentially uniform bracts of the involucre.

Onoseris conspicua, n. comb. *Rhodoseris conspicua*, Turcz. Bull. Soc. Nat. Mosc. xxiv. pt. 2, 95, t. 2 (1851); Hemsl. Biol. Cent.-Am. Bot. ii. 254 in synonymy. — MEXICO. Sierra San Pedro, Nolasco, *Jurgensen*. State of Oaxaca: near Plumia, altitude 1000–1500 m., 17 March, 1895, *E. W. Nelson*, no. 2480 (hb. Gr.). The few-flowered heads and the long involucre are important diagnostic characters of this species.

Onoseris rupestris, n. comb. *Caloseris rupestris*, Benth. Pl. Hartw. 88 (1841). *Perezipsis Donnell-Smithii*, Coulter. Bot. Gaz. xx. 53, t. 6 (1895). Mr. W. Botting Hemsley of the Royal Gardens at Kew has kindly compared for me *Heyde & Lux* no. 4527, exsiccatæ John Donnell Smith, with the original of *Caloseris rupestris*, Benth., and states that the two plants are conspecific. The species is characterized especially by the long involucre, the purplish involucreal bracts, and by the mingling of hirtellous hairs with the arachnoid tomentum of the peduncles. *O. rupestris* is easily separated from *O. Isotypus*, Benth. & Hook. f., with which it has been confused by having a much longer involucre.

Perezia, Lozani, n. sp. Stem striate, purplish, hirtellous-puberulent: leaves sessile, amplexicaul, ovate-oblong, in specimens at hand 2.5 to 7 cm. long, 1 to 4 cm. broad, acute, unequally and subspinously dentate, slightly hirtellous above, glandular-hirtellous and rather prominently reticulate-veined beneath: inflorescence a terminal corymb or corymbose panicle, leafy: heads mostly short-pedunculate, 12 to 16 mm. high, about 25-flowered: involucre narrowly campanulate; bracts of the involucre imbricated in 5 to 6 series, linear-oblong to lanceolate, 4 to 8 mm. long, the outer bracts successively shorter, squarrose, mostly herbaceous, slightly expanded at the tips and mucronate, hirtellous-puberulent, the inner

lanceolate and obtuse or acute, greenish or purplish: mature achenes 5 mm. long, glandular-hirtellous. — MEXICO. State of Hidalgo: under dry cliffs between Metepec and Zontecomate Stations, altitude 2590 m., 19 September, 1904, *C. G. Pringle*, no. 8871 (hb. Gr.).

The rather unusual involucre with its squarrose broad-tipped more or less herbaceous bracts readily characterizes this species and renders it easily distinguishable among all other species of the genus. It is named in honor of Sr. Filemón Lozano, worthy assistant of Mr. C. G. Pringle.

Perezia megacephala, n. sp. An herbaceous perennial, glabrous throughout: stem simple, erect, about 6 dm. high, springing from an enlarged ferrugineous-tomentose base, striate: leaves obovate-oblong to oblanceolate, 2.5 to 11 cm. long, 1 to 5 cm. broad, obtuse or acutish, serrate-dentate to entire, thick and firm in texture, conspicuously reticulate-veined on both surfaces, strongly ascending and subimbricated on the stem; the lower leaves largest, semiamplexicaul and serrate-dentate, the upper smaller, narrowed to a petiole-like base and entire: heads large, 3.5 to 4 cm. high and about as broad, solitary, terminating the stem: involucre broadly campanulate; bracts of the involucre 6-7-seriate, those of the outer series oblong and mucronate-acute, the innermost lanceolate, acute and purplish-tipped: flowers numerous, 2 to 2.5 cm. long: corollas purplish: achenes about 7 mm. long, glabrous. — *P. Wislizeni*, var. *megacephala*, Gray, Proc. Am. Acad. xxii. 433 (1887). — MEXICO. State of Jalisco: Rio Blanco, October, 1886, Dr. Edward Palmer, no. 655 (hb. Gr.). Dr. Palmer's plant was regarded by Dr. Gray as a variety of *P. Wislizeni*. The latter is now well represented in the Gray Herbarium through the collections of Wislizenus, Pringle, Palmer, and Nelson; it is a species showing little tendency to extreme variation, and is characterized especially by the glaucous nature of stem and foliage, the upper portion of the stem being essentially naked, and by the comparatively few broad outer involucre bracts. In *P. megacephala*, on the other hand, the bloom is absent, the stem is leafy to the single terminal head, and the outer involucre bracts are more numerous, longer, and broader. In view of these apparently constant differences the writer has no hesitation in raising Dr. Gray's variety to specific rank.

PEREZIA MONTANA, Rose. Contr. U. S. Nat. Herb. i. 105, t. 8 (1891). Specimens of this very distinct species have been secured by Dr. Edward Palmer at Santiago Papasquiaro, State of Durango, April and August, 1896, no. 59 (hb. Gr., and hb. U. S. Nat. Mus.). The achenes, although originally described as glabrous, are not infre-

quently somewhat pubescent. The Durango collection adds another station towards determining the geographical range of the species.

Trixis megalophylla, n. sp. Shrub: stem covered with a grayish brown bark, at first pubescent, later glabrate, somewhat winged from the decurrent foliage: leaves short-petiolate or the uppermost subsessile, oblong-lanceolate, 5 to 17 cm. long, 1.5 to 6 cm. broad, acute, entire or denticulate, revolute-margined, mostly contracted at the base into a short narrowly winged petiole, hirtellous-puberulent above, tomentulose beneath; midrib and lateral veins prominent on the under surface: inflorescence a terminal leafy glandular-hirtellous paniculate cyme; bracts of the inflorescence ovate to ovate-lanceolate, foliaceous: heads 15 to 18 mm. high, about 12-flowered: outer or accessory bracts of the involucre lanceolate or slightly oblanceolate, nearly equalling or a little exceeding the linear-oblong about 12 mm. long short-acuminate inner true involucral-bracts; mature achenes about 7 mm. long, hirtellous-pubescent with a few glandular hairs intermixed. — MEXICO. State of Guerrero: between Sochi and Tlalkinsala, altitude 1100 to 1465 m., 29 November, 1894, *E. W. Nelson*, no. 2038 (hb. Gr., and hb. U. S. Nat. Mus.). On account of the large leaves and the glandular inflorescence the species is very characteristic, and readily recognized among all the other species of the genus.

Trixis Nelsonii, n. sp. Shrub: stem covered with a brownish bark, wingless; ultimate branches tawny-pubescent: leaves petiolate, elliptic-ovate to oblong-lanceolate, 3 to 7 cm. long, 1 to 3 cm. broad, abruptly acuminate-apiculate, entire or denticulate, narrowed at the base into a short petiole, rugulose and somewhat hirtellous on the upper surface, densely and permanently tomentose beneath, revolute-margined; petioles 5 to 8 mm. long: heads about 1.5 cm. high, rather crowded at the ends of the branches: bracts of the outer involucre mostly oblanceolate, 5 to 8 mm. long, acute; inner bracts of the true involucre 8, linear-oblong, about 12 mm. long, short-acuminate, acutish, and as well as the outer bracts and peduncles tawny-pubescent intermixed with glandular hairs or glandular papillae: flowers about 16. — MEXICO. State of Chiapas: between San Cristobal and Teopisca, altitude 2040 to 2590 m., 4 December, 1895, *E. W. Nelson*, no. 3459 (hb. Gr., and hb. U. S. Nat. Mus.). Of the known species of this genus *T. Nelsonii* is nearest *T. rugulosa*, Rob. & Greenm., but differs in having broader leaves, which are abruptly contracted at the apex not gradually attenuated, and in being densely and permanently tomentose beneath; moreover, the outer involucral bracts in *T. Nelsonii* are usually broader than in *T. rugulosa*.

II. DIAGNOSES AND NOTES RELATING TO AMERICAN EUPATORIEAE.

BY B. L. ROBINSON.

Ophryosporus venosissimus, n. comb. *Eupatorium venosissimum* Rusby, Mem. Torr. Bot. Club, vi. 57 (1896). The anthers of this species, even when examined with a compound microscope, show no vestige of an apical appendage. In other respects, such as the few subequal scales of the involucre, the species is in agreement with *Ophryosporus*. In habit and foliage it somewhat resembles *O. Cumingii*, Benth.

THE GENUS *AGERATELLA* seems never to have received a formal or detailed characterization. It was originally founded (without generic description) upon two plants which Dr. Gray regarded as varieties of a single species. Hoffmann, in Engl. & Prantl, Nat. Pflanzenf. iv. Abt. 5, p. 137 (1890), also regarded the genus as monotypic and gave only a comparative, 2-line description of it. With the more abundant material now at hand it is clear that there are two distinct species. The generic characters and specific distinctions may be recorded as follows:—

AGERATELLA, Gray. Capitula homogama, cylindrica vel anguste campanulata, ca. 15-flora. Involucris squamæ valde inaequales, in seriebus 5 verticalibus imbricatae, exterioribus brevibus ovatis, interioribus longioribus lanceolato-oblongis, intimis linearibus angustissimis deciduis paleiformibus. Receptaculum hemisphaericum, nudum, parvum. Corollae anguste tubulosae sine ullis faucibus distinctis summa parte plus minusve contractae, externe sparse glandulosae, dentibus limbi 5 anguste oblongis brevissimis erectis. Antherae oblongae, basi obtusae, connectivo apice incrassato truncato vel in appendicem brevem obtusam producto. Achænia 5-gona, prismatica, deorsum leviter angustata, in costis sursum hispidula. Pappi paleae ovatae vel lanceolatae, translucidae, erosae, costa unica hispidula in aristam longam purpurascentem producta. Styli rami elongati, leviter clavellati. — Gray ex Wats. Proc. Am. Acad. xxii. 419, 420 (1887); Hoffm. in Engl. & Prantl, Nat. Pflanzenf. iv. Abt. 5, p. 137 (1890). — Frutices vel suffrutices graciles, humiles, ramosi. Folia parva, opposita vel alterna, ovata vel oblonga vel linearia. Capitula numerosa, mediocra, racemosa vel paniculata.

A. MICROPHYLLA, Gray, l. c. Fruticosa copiose paniculatim ramosa; ramis gracillimis subteretibus decumbentibus puberulis apice nudiusculis

in pedunculos gracillimos ca. 6 cm. longos laxe spicato-pluricapitados productis; foliis subsessilibus oppositis late ovatis vel ovato-rhomboides crenato-serratis obtusiusculis 6-10 mm. longis 4-7 mm. latis utrinque puberulis et glanduloso-atomiferis; pedicellis ad 3 mm. longis; involucri anguste campanulati squamis viridibus vel brunnescentibus dorso puberulis, exterioribus acutis, interioribus obtusiusculis vel apice rotundatis; capitulis ca. 17-floris. — *Ageratum microphyllum*, Sch. Bip. in Seemann, Bot. Herald, 298 (1856). *Decachaeta Seemanni*, Benth. & Hook. f. Gen. ii. 239 (1873). *D. Seemannii*, Hemsl. Biol. Cent.-Am. Bot. ii. 78, t. 42 (1880). *Ageratella microphylla*, var. *Seemanni*, Gray, l. c. — Northwestern Mexico, *Seemann*, no. 2043 (co-type, in hb. Gr.).

A. Palmeri, n. sp. Suffruticosa erecta; caulibus saepius plurimis 5-6 dm. altis teretibus pilis brevissimis crispis griseo-puberulis foliosis; foliis alternis lanceolatis vel lineari-oblongis obtusiusculis vel apice rotundatis inciso-serratis vel integris 1-3-nerviis 12-20 mm. longis griseo-puberulis et obscure atomiferis; inflorescentia elongata angusta folioso-bracteata, ramulis gracilibus ad 4 (rarius 10) cm. longis adscendentibus 1-6 (rarius 15)-capitatis; squamis involucri subcylindrici vel anguste campanulati viridibus striatis, exterioribus brevibus plus minusve griseo-puberulis capitulis ca. 13-floris. — *A. microphylla*, var. *Palmeri*, Gray, l. c. — Rio Blanco, Jalisco, Mexico, *Palmer*, no. 537 (type, in hb. Gr.); on dry porphyritic hills near Guadalajara, *Pringle*, no. 1815; Sierra de San Esteban, *Pringle*, nos. 9840, 11,480. This species is readily distinguished from the other by its narrow alternate leaves and different inflorescence.

Oxylobus adscendens, ROBINSON & GREENMAN, n. comb. *Ageratum adscendens*, Sch. Bip. ex Benth. & Hook. f. Gen. ii. 242 (1873), nomen subnudum; Hemsl. Biol. Cent.-Am. Bot. ii. 80 (1881), where first described; Klatt, Leopoldina, xx. 75 (1884). This species, both from habit and technical characters, should be placed in *Oxylobus*, Moc., a marked group of three or four ageratoid *Eupatorieae* regarded as a genus by Mocifio, as a subgenus of *Phania* by De Candolle, Prod. v. 115 (1836), as aberrant species of *Ageratum* by Benth and Hooker f., l. c., but restored to generic rank by Dr. Gray, Proc. Am. Acad. xv. 25-26 (1879), who, however, failed to include the species here mentioned. Dr. Gray's two binomials, *O. arbutifolius* and *O. glanduliferus*, appear to have been entirely overlooked by the compilers of the Index Kewensis. In this connection it may be worth while to call attention to a probable error by which Mr. Hemsley (Biol. Cent.-Am. Bot. ii. 82) extends the range of the latter of these two species to "Venezuela, &c., Fendler,

1155." It seems more than likely that the specimen referred to was Linden's 1155 from Southern Mexico, which is, in fact, *O. glanduliferus*, while Fendler's 1155 is, at least in the Gray Herbarium, a piperaceous plant.

Fleischmannia Langlassei, n. sp. Suffruticosa decumbens plus minusve ramosa 2 dm. vel ultra alta; caulibus teretibus griseo-brunneis, ramulis leviter angulatis infra glabratis supra glanduloso-pilosis foliosis; foliis alternis graciliter petiolatis ovato-lanceolatis inciso-serratis vel etiam profunde trilobatis tenuibus 1-2.5 cm. longis 5-12 mm. latis utrinque viridibus subconcoloribus glabratiss, petiolo 5-14 mm. longo juventute glanduloso-pilosiusculo maturitate omnino glabrato; capitibus multifloris longissime pedunculatis, pedunculis 1-4 in apicibus ramorum dispositis gracilibus plus minusve flexuosis obscure glanduloso-pilosiusculis vel in maturitate glabris; involucrio turbinato-campanulato 8-14 mm. diametro squamis lanceolato-linearibus acutissimis striatis valde inaequalibus multiseriatim imbricatis glaberrimis purpurascenscentibus; receptaculo leviter convexo nudo; corollis albidis anguste tubulosis glabris 4.5 mm. longis sub limbo brevissimo erecto 5-dentato saepe leviter constricto; styli ramis longe exsertis conspicuis purpureo-roseis; acheniis linearibus in angulis 5 sursum hispidis 1.7 mm. longis basi callosis, setis pappi 5-6 purpureis capillaribus sed firmiusculis 4 mm. longis. — Moist rocks, Arroyo de Barabas, Michoacan or Guerrero, Mexico, alt. 1000 m., 11 March, 1898, *E. Langlasse*, no. 27 (type, in hb. Gr.). Vernacular name, *clavellilo*. In inflorescence, flowers, and achenes this species is much like *F. Schaffneri*, Gray, but it differs conspicuously in its chiefly undivided very thin and completely glabrate leaves, as well as in its glabrate petioles and peduncles. In *F. Schaffneri* the leaves, which are of firm texture and somewhat grayish green with a fine permanent glandular puberulence, are regularly cleft nearly to the base into three linear lobes.

Piptothrix aegiroides, n. sp. Erecta; caule 6-12 dm. alto subtereti purpureofolioso simplici glaberrimo; foliis oppositis graciliter petiolatis ovato-deltoides acuminatis serrato-dentatis vel crenatis firmiusculis utrinque subreticulatis supra viridibus glabris subtus pallidioribus in nerviis 3 pubescentibus 6 cm. longis 5 cm. latis, petiolo purpureo supra subsulcato 1.5-3 cm. longo; capitulis ca. 20-floris numerosissimis in corymbo planiusculo dispositis, pedicellis 5 mm. longis bracteolatis glabris; involucri campanulati squamis ca. 12 subaequalibus sub-biseriatim imbricatis oblongis viridibus vel apice obtuso eroso purpurascenscentibus 3 mm. longis; receptaculo paleaceo, paleis linearibus obtusis; corollis albis tubulosis glabris tubo proprio gracili saepe curvato ca. 1.3 mm.

longo in fauces longos subcylindricos leviter gradatimque ampliato, dentibus limbi ovato-oblongis obtusis erectis vel plus minusve patentibus; antheris apice longe appendiculatis basi rotundatis; filamentis glabris; achaeniis atrofusciis prismaticis valde 5-costatis glabris saepius leviter curvatis basi albocallosis 1.7 mm. longis; pappi setis paucis inaequalibus sursum scabridis purpurascensibus ca. 2 mm. longis caducissimis. — Under oaks, cool slopes of mountains above Etzatlán, Jalisco, Mexico, 24 October, 1904, *C. G. Pringle*, no. 8859 (type, in hb. Gr.)

Eupatorium chrysostylum, n. sp. Herbaceum e radice lignosa suberectum 2–3 dm. altum, caulibus compluribus flexuosis subsimplicibus mollissime albo-lanatis, pilis perlongis tenuibus patentissimis plus minusve viscosis; foliis oppositis petiolatis deltoideo-ovatis acutis grosse et argute dentatis ca. 3 cm. longis 2.5 cm. latis tenuibus concoloribus utrinque viridibus sed a grisea pubescentia tectis; petiolo 1–1.5 cm. longo patente tomentoso; paniculis rotundatis compactis multicapitulatis terminalibus vel subterminalibus, pedicellis 3–7 mm. longis viscoso-tomentosis; capitulis ca. 30-floris 12 mm. longis, involuero turbinato-cylindrico, squamis lanceolato-linearibus viridibus striato-nerviis valde inaequalibus multiserialim imbricatis adpressis acutissimis dorso margineque griseo-pubescentibus; corollis glabris flavescentibus vel virescentibus longe tubulosis sursum sub limbo brevi 5-dentato erecto vel modice patefite leviter angustatis ca. 5 mm. longis; antheris linearibus apice appendice ovato-lanceolata munitis; stylis clavatis valde exsertis aureis conspicuis; achaeniis gracilibus 4 mm. longis nigris pubescentibus deorsum leviter angustatis basi callosis; pappi setis ca. 25 vix barbellatis valde inaequalibus albis. — Dry ledges, rocky hills near Chihuahua, Mexico, 17 April, 1885, *C. G. Pringle*, no. 135 (type, in hb. Gr.) This plant, although distributed as *E. Parryi*, Gray, differs from that species conspicuously in its far more copious and less glandular pubescence, its more sharply toothed leaves, which are truncate rather than cordate at the base, and in its dense inflorescence, the pedicels in *E. Parryi* being two to four times as long and the heads relatively few.

Eupatorium leucoderme, n. sp. Fruticosum; ramis teretibus flexuosis albidis laevibus, ramulis fulvo-tomentellis; foliis oppositis oblongo-lanceolatis tenuibus utrinque viridibus 3-nerviis serratis vel subintegris 5–7 cm. longis 2–2.5 cm. latis utrinque praecipue in nerviis fulvo-puberulis subtus crebre nigro-punctatis apice attenuato-acuminatis basi obtusis vel rotundatis; nerviis a venulis transversariis quam eae Miconiae connexis; petiolo ca. 6 mm. longo gracili flexuoso fulvo-tomentello; paniculis lateralibus oppositirameis dense corymboso-thyrsoideis 6–9 cm. dia-

metro; capitulis ca. 6-floris sessilibus in glomerulis rotundatis congestis; squamis involucri lanceolato-linearibus acuminatis valde inaequalibus sub-uniseriatis dorso fulvo-puberulis; corollis albis anguste tubulosis 4 mm. longis, limbo resinoso-punctato leviter ampliato brevissime 5-dentato; achaeniis prismaticis vix 3 mm. longis; setis pappi ca. 40 barbellatis 3.5 mm. longis sordido-albis; antheris breviter sed distincte in apice appendiculatis. — Sandy soil, Chuta, Michoacan or Guerrero, Mexico. alt. 25 m., 20 June, 1898, *E. Langlassé*, no. 183 (type, in hb. Gr.). In habit this species much resembles *E. albicaule*, Sch. Bip., but differs in its thin punctate leaves, acuminate involucreal scales, etc.

Eupatorium Lozanoanum, n. sp. Fruticosum oppositifolium glaberrimum; ramis striatulis teretibus fusciscentibus, ramulis teretibus viridibus foliatis, internodiis 2–9 cm. longis; foliis oppositis petiolatis ovato-lanceolatis falcatis caudato-acuminatis cuspidato-serratis basi inaequali obtusis vel rotundatis supra basin trinerviis sed etiam prope basin nerviis duabus parvis brevibus marginalibus plus minusve obscuris munitis utrinque laete viridibus subluccidis pulcherrime pellucide punctatis reticulatisque 8–10 cm. longis 2–3 cm. latis; paniculis terminalibus laxis trichotomis 5–10 cm. diametro pyramidalibus 60–80-capitatis, ramulis gracilibus saepe divaricatis plus minusve puberulis capitula subsessilia ad apicem gerentibus; capitulis cylindricis 1 cm. longis 3 mm. diametro 4-floris; involucri squamis paucis (ca. 8) valde inaequalibus viridibus striatulis convexis apice obtusiusculis, exterioribus minimis ovatis, interioribus oblongis; corollis viridi-albis tubulosis 5 mm. longis glabris, tubo proprio faucibus vix ampliatis subaequantibus, dentibus limbi 5 brevibus triangularibus patentibus; antheris apice longe appendiculatis; achaeniis prismaticis deorsum angustatis 3.7 mm. longis in costis 5 hispidulis inter costis obscure puberulis; pappi setis ca. 40 albis sursum-barbellatis, plurimis sublongioribus corollae superantibus prope apicem subdilatatis; styli ramis rectiusculis longissimis vix clavatis flavido-brunneis. — In the deep barranca below Trinidad Iron Works, Hidalgo, Mexico, 12 July, 1904, *C. G. Pringle*, no. 8942 (type, in hb. Gr.). Dedicated to Mr. Filemón L. Lozano, the faithful and efficient assistant of Mr. Pringle in his field work.

Eupatorium petraeum, n. sp. Frutex 1.5 m. altus, caule solitario tereti purpureomaculato minute puberulo; foliis alternis late ovatis vel suborbicularibus acutiusculis angulatis vel sublobatis undulato-dentatis petiolatis supra basin 3–(5)-nerviis utrinque reticulatis in nerviis puberulis 10 cm. longis 9 cm. latis, petiolo puberulo subtereti 2–2.6 cm. longo; panicula ramosissima ampla pyramidata obscure pubescenti, bracteis minimis angustis, ramulis prope apicem solum capituliferis, pedicellis

filiformibus divergentibus 3 mm. longis; capitulis numerosissimis parvis 4 mm. longis ca. 14-floris; involucri campanulati squamis valde inaequalibus sub-3-seriatim imbricatis, extimis brevissimis parvis paucis lanceolatis subacutis puberulis, interioribus elliptico-oblongis obtusis vel rotundatis supra mediam partem pubescentibus 2.2 mm. longis, receptaculo leviter convexo paleaceo, paleis caducis linearibus obtusiusculis apice puberulis; corollis albis minute sparseque glandulosis 2 mm. longis, faucibus gradatim ampliatis tubo proprio vix longioribus, dentibus limbi ovato-deltaideis acutiusculis brevissimis recurvatis; antheris subtruncatis sed inter apicibus thecarum connectivo valde expanso evasculoso; acheniis brevibus deorsum angustatis in costis 5 sursum hispidulis, setis pappi ca. 15 albis sursum barbellatis 1.7 mm. longis. — In granitic soil, Sierra Madre in the State of Guerrero, Mexico, altitude 1200 m., 4 November, 1898, *E. Langlассé*, no. 565 (type, in hb. Gr.). This species shows in its anthers a transition to *Ophryosporus*. However, the modification of the upper part of the connective into an expanded transparent spongy cushion devoid of vascular tissue is clearly a rudimentary form of the terminal appendage. In the true species of *Ophryosporus*, on the other hand, no such rudiment is visible even under the compound microscope. Furthermore, the true *Ophryospori* have an involucre of nearly equal subuniseriate scales and a naked disk.

Eupatorium Michelianum, n. sp. Fruticosum 1.25 m. altum; ramulis teretibus gracilibus rectis foliosis fulvo-glanduloso-hirsutulis; foliis oppositis subsessilibus basi rotundatis vel cordatis subamplexicaulibus elongato-oblongis attenuatis argute serrulatis firmissculis ad 13 cm. longis 3 cm. latis glabriusculis penninerviis utrinque reticulato-venulosis subtus pallidioribus aureo-atomiferis; paniculis terminalibus oppositirameis bracteatis rotundatis ca. 1 dm. diametro ca. 90-capitatis, pedicellis teretibus ca. 5 mm. longis; capitulis ca. 22 floris ovoideo-cylindricis 1 cm. longis; squamis involucri arcte adpressis multiseriatim imbricatis apice rotundatis erosis discoloribus, extimis brevissimis suborbicularibus, intimis anguste linearibus; corollis albis anguste tubulosis sursum vix ampliatis, limbo patente breviter 5-dentato; antheris apice longe appendiculatis; acheniis prismatis 5-costatis deorsum leviter angustatis 3.3 mm. longis in costis hispidulis. — In granitic soil of the Sierra Madre, Guerrero, Mexico, altitude 1200 m., 7 December, 1890, *E. Langlассé*, no. 589 (type, in hb. Gr.). This species is allied to *E. glaberrimum*, DC., but is glandular-hirsute. It is also near *E. Oerstedianum*, Benth., from which it differs in its hispidulous achenes and narrower involucre, the lowest scales being suborbicular and not at all herbaceous. It is dedicated to

the memory of the late Marc Micheli, at one time editor of the interesting *exsiccatae* of which it forms a part.

EUPATORIASTRUM NELSONII, Greenman, var. *cardiophyllum*, ROBINSON & GREENMAN, n. var. *Habitu et floribus formae typicae; foliis suborbicularibus duplicato-dentatis basi valde cordatis.* — Los Piños, Chiapas, Mexico, 2 June, 1904, *E. A. Goldman*, no. 1052 (type, in hb. U. S. Nat. Mus., tracing and fragments in hb. Gr.).

KANIMIA NITIDA, Bak. in Mart. Fl. Bras. vi. pt. 2, 370 (1876). In the Index Kewensis, ii. 3 (1895), Hooker, f. and Jackson reduce this species to *K. "erythralina,"* crediting the latter name to Bentham and Hooker, f. Gen. ii. 247 (1873). If the combination had been correctly made in the Genera Plantarum it would obviously antedate Baker's binomial and stand according to the rule of priority under the genus, but this is not technically the case. At the place indicated, Bentham and Hooker, f. merely refer to *Kanimia*, the plant which they call "*Mikania erythralina*, DC." The combination *Kanimia erythralina* is not made, and indeed there is no assurance that the authors of the Genera Plantarum regarded the transferred plant as a distinct species or that in naming it under *Kanimia* they would have adopted the combination *K. erythralina*. All that their statement conveys is the fact that the generic affinities of De Candolle's plant are with *Kanimia* rather than with *Mikania*. There is, however, an added reason why the transfer in the Genera Plantarum should not in this instance be regarded as equivalent to the creation of the new binomial *K. erythralina*, for De Candolle's specific name was *erithalina*, given from a fancied resemblance of the plant to *Erithalis*. *Kanimia nitida*, Baker, is not only the first correct combination accompanied by accurate synonymy, but happily it is also in accordance with the most rigid priority of the specific name, for it is founded on *Eupatorium nitidum*, DC. Prod. v. 180 (1836), which has priority of position over *Mikania erithalina*, DC.

CARPHEPHORUS REVOLUTIFOLIUS, DC. Prod. v. 133 (1836). This species, described by the eldest De Candolle, was based upon a specimen sent to him by Sternberg from the herbarium of Haenke and supposed to have been collected in Mexico. Concerning the plant Bentham and Hooker, f. (Gen. ii. 249) say "*C. revolutifolius*, DC. l. c. 133, e Mexico, et *C. cordifolius*, DC. Prod. vii. 267, e Brasilia, nobis ignoti, certe e descr. e genere expellendi sunt." By Hemsley (Biol. Cent.-Am. Bot. ii. 108), *C. revolutifolius*, DC., is still included in the Mexican flora, but with the comment that both this and *C. ? triangularis*, Gray, are doubtful species. At the request of the writer, Mr. Casimir De Candolle has

been so kind as to lend for examination a bit of the original plant of Haenke from the Prodrômus Herbarium at Geneva, calling attention to the fact that Schultz Bipontinus had once seen the specimen, and recorded on the sheet his opinion that it was not Mexican, but was the Chilean *Pleocarpus revolutus*, Don. It appears that this supposition has never been put on record in print. It is, however, fully confirmed by an examination of the fragment sent by Mr. De Candolle. The plant is certainly not a *Carphephorus*, nor does it belong to the *Eupatorieae*. The corollas are distinctly bilabiate, and the achenes are not at all angled. It agrees very closely with Don's description of *Pleocarpus revolutus* and with Gay's admirable colored plate of the Chilean plant (Fl. Chil. t. 43). In the Gray Herbarium there is furthermore a specimen of *Pleocarpus revolutus* collected by Gay, and with this also the plant of Haenke is in close agreement, the only differences noted being a slightly greater pubescence on the pedicels and a tendency for the bracts of the involucre to be a little narrower, differences of degree only, and so slight that they may be confidently attributed to individual variation. The genus *Pleocarpus* has no floral distinctions from *Jungia*, with which it has been united by nearly all writers, who have had occasion to mention it in recent years. In accordance with this view, the plant in question should be called:

Jungia revoluta, n. comb. *Pleocarpus revolutus*, D. Don. Trans. Linn. Soc. xvi. 228 (1830); Remy in Gay, Fl. Chil. iii. 427, t. 43. *Carphephorus revolutifolius*, DC. Prodr. v. 133 (1836). Of the same habitually divergent section of *Jungia* is also

J. dentata, n. comb., *Pleocarpus dentatus*, Phil. Linnaea, xxxiii. 51 (1864).

It is well known that confusion has existed in the collections of Haenke and Née, whose plants came partly from western South America and partly from Mexico. It is, therefore, a matter of no surprise that the problematic *Carphephorus revolutifolius*, which many acute and diligent collectors in Mexico have never succeeded in rediscovering, should be found identical with a plant from Chili, whence without doubt the plant of Haenke originally came. The species should, therefore, be eliminated both from the Mexican flora and from the genus *Carphephorus*.

